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ABSTRACT

A five-year study was undertaken to develop criterion rating scales for predicting successful performance in graduate business study, as well as in later career progress. The scales embodied dimensions, other than grades, which were judged by a nationwide panel of faculty to be relevant to performance. The scales were defined and anchored by specific examples of behavioral incidents, and were entitled: interest in management involvement; managerial skill; self development; perspective and breadth of knowledge; technical knowledge; critical awareness; problem analysis ability; resolution and decisiveness; planning for implementation; communication skill; enthusiasm; initiative; persistence and drive; flexibility; and consideration.

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PERFORMANCE CRITERIA IN GRADUATE BUSINESS STUDY: PARTS I AND II--DEVELOPMENT OF RATING SCALES, BACKGROUND DATA FORM AND THE PILOT STUDY

Thomas L. Hilton, Lorne M. Kendall
and Thomas B. Sprecher

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Abstract

Is grade average alone a sufficient criterion of student attainment or should other student attributes be measured to supplement grades as criteria, especially in selecting biographical predictors?

A five-year study was undertaken in which criterion rating scales were developed embodying dimensions, other than grades, judged by faculty to be relevant to performance in graduate study in business and to later career progress. After extensive consultation with a nationwide panel of faculty members, the scales were defined and anchored by specific examples of behavioral incidents. In addition, a comprehensive biographical questionnaire was prepared.

A pilot study in two graduate business schools showed the technique to be promising, although very demanding of the faculty judges. The research staff's experience in developing the scales is discussed, as well as the implications of the procedure.

PERFORMANCE CRITERIA IN GRADUATE BUSINESS STUDY:
PARTS I AND II--DEVELOPMENT OF RATING SCALES, BACKGROUND DATA FORM AND THE PILOT STUDY[1]

Thomas L. Hilton, Lorne M. Kendall[2],
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Educational Testing Service

This paper reports the development of criterion measures embodying, insofar as possible, the generally agreed upon goals of graduate business education. Assuming that mastery of course content is measured reasonably well by current examining methods, criterion measures developed in the course of this study were aimed at qualities found desirable by faculty members but not satisfactorily taken into account by present grading procedures--qualities which sometimes result in the designation of a B student rather than an A student as the man most likely to contribute significantly in later professional life.

A broad array of criteria was sought as the first step towards a more comprehensive basis for judging the effectiveness of various materials and methods used in student selection. These selection aids (predictors) include previous academic performance, test scores, and biographical and background data. Certainly students who obtain good grades are wanted, but there may well be other characteristics of equal or greater importance to later performance which are not adequately reflected in grades. If academic grades, as presently assigned, do not fully reflect the values which schools are trying to achieve, then the use of grades alone as a criterion leads to quite inadequate and misleading evaluations.

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[1] The authors are indebted to W. B. Schrader, John A. Winterbottom and Paul Van R. Miller for their assistance in conducting the study.

[2] Now at Simon Fraser University.

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Most evidence indicates that aptitude and achievement measures are the best predictors of academic grades and that the addition of extra-academic measures, such as biographical and background information, to the predictor battery produces only moderate increments in the accuracy with which grades can be predicted--probably not enough to justify the added cost of using the additional predictors. In a study of high school students, Hilton and Myers (1967), for example, found that biographical information alone yielded a multiple correlation with rank in class of .57, test scores alone yielded a multiple correlation of .66, and that biographical information added to test scores raised the multiple correlation to .72. These data give little support for the use of biographical data in selecting students who will obtain good grades.

But biographical and other extra-academic information may be used in admissions work to indicate things other than academic performance in the narrow sense of grade-getting. Then the use of more comprehensive criteria is required and there is good reason to believe that in such cases extra-academic data would contribute substantially to prediction. The study involving college undergraduates by Anastasi, Meade, and Schneiders (1960) supports this expectation.

Thus, comprehensive criteria should permit a more adequate evaluation of extra-academic information and contribute to the development of guidelines for the use of these materials in admissions. In addition, there are important supplementary uses for an array of criterion measures. Of special importance is the place of grades within the context of the comprehensive criteria; a description of grades in terms of several distinguishable criterion dimensions could prove informative. An array of criterion measures could be used directly for purposes of evaluation at the completion of a program and could be used at several stages during the progress of a program to assess the growth resulting from the program. Finally, assessments in terms of the criterion measures applied during graduate training may provide good leads as to likely subsequent performance on the job, an especially important consideration in view of the frequent finding that such later performance has negligible or only modest relationships to academic performance as measured by grades alone.

The present report deals with the development and pilot testing of a number of criterion measures.

Part I: The Development of the Rating Scales

Procedure

Selection of Method for Criterion Measurement

Some means of rating was judged to be the most appropriate way of obtaining the required information concerning the dimensions of greatest interest. The problems inherent in rating (biases from leniency and halo, unreliability, and associated difficulties) are, however, common knowledge. These problems arise from (a) ambiguity or indefinite specification in defining the content of a trait to be rated and in providing standards by which to judge the level of a trait, and (b) lack of specific, relevant information about the subject which can be used in arriving at a rating. To alleviate these problems a method of rating was chosen which was designed to force the attention of the rater on behavioral incidents relevant to qualities to be assessed.

Behaviorally anchored rating scales have a long history (Paterson, 1923; Richardson & Kuder, 1933). The specific method used here was first developed by Smith and Kendall (1963) for use in evaluating several dimensions of nursing performance. These scales were anchored by examples of expected behavior. Expectations based on having observed similar behavior were used to permit rating in a variety of situations without sacrifice of specificity.

The method developed initially with nurses has been generalized with good results to evaluate student counsellors (Maas, 1963) and research engineers (Sprecher, 1965). Maas compared conventional graphic rating methods with behaviorally anchored scales with the general result that inter-rater reliability was usually one and one-half to two times larger for the behaviorally anchored scales under comparable conditions and for the same traits. For example, median inter-interview correlations (with different interviewers in each interview) between overall summary evaluations was .34 for the traditional method as compared with .55 for the behaviorally anchored method.

Sprecher, working with engineers, used factor analysis techniques to demonstrate that behaviorally anchored scales produced a number of distinguishable and somewhat independent dimensions for evaluation.

Connor and Talbot (1964) used specific behavioral examples to anchor rating scales to evaluate progress of young mentally retarded children exposed to an experimental curriculum.

There are four steps in the present method. First, qualities to be evaluated are selected and general definitions constructed. Then examples of incidents intended to illustrate each quality are collected. These incidents are reallocated by independent judges to determine the extent of agreement as to the quality best illustrated by a given example. Finally, judgments are obtained as to the level of a quality illustrated by a given example.

Determination of Qualities to Be Evaluated

Opinion was surveyed concerning the qualities that should be assessed. This was done partly through a survey of the literature, but primarily through assembling a small group of knowledgeable and interested consultants from the faculty at several business schools. Faculty consultants and Educational Testing Service personnel met for the purpose of developing definitions and illustrations of qualities most desired in the graduates of business schools. In order to establish some common ground as a point of departure for the meeting, each participant prior to the meeting contributed a position paper defining some of the qualities he regarded as important and outlined the rationale for their selection.

Over 100 qualities were proposed, but attention was restricted to those qualities that could be illustrated with specific examples and thus might have a chance of being inferred from concrete, observable behavior. Wisdom, for example, was rejected but initiative was retained. The success of the method lies in constant attention to the linking of general qualities to specific illustrations of behavior exhibiting those qualities. The investigators did find, however, that in order to limit the qualities to a manageable number, which at the same time were reasonably comprehensive, it was necessary to combine some attributes into fairly global dimensions--more global than desirable in terms of clear-cut definitions. Persistence and drive, for example, were combined in one scale. The final list included 15 qualities.

The position papers submitted by the consultants provided the background from which numerous illustrations, and, eventually, final forms of rating scales were developed. The papers provided a general definition of high, medium, and low levels of each of a number of qualities.

Collection of Examples of Specific Behaviors in Each Quality

The faculty consultants provided at least one specific example illustrating each level of each quality to be considered. Wherever possible, examples were included from a variety of settings in order to emphasize the generality of a quality across different situations such as the classroom, seminars, written reports, and face-to-face exchanges. Additional definitions and behavioral examples were supplied by ETS personnel. A sampling of the examples is as follows:

> This student would prefer a summer job as a management trainee to a higher-paying technical job.
>
> In case discussions this student would not consider the social implications of suggested actions.
>
> Public relations aspects of problems would be considered irrelevant and might be ignored by this student.
>
> This student seldom misses deadlines.
>
> This student would be at a loss if the room he was assigned for a discussion group was locked.

In all, 263 specific examples were collected and edited to appear in a common format. Forty-two examples which duplicated or nearly duplicated others were eliminated. The surviving items are shown in Appendix A. Each example was printed on a separate three by five card and packets of 50 randomly selected cards were assembled for the next step, along with general definitions of each of the 15 potential qualities.

Allocation of Examples to Qualities

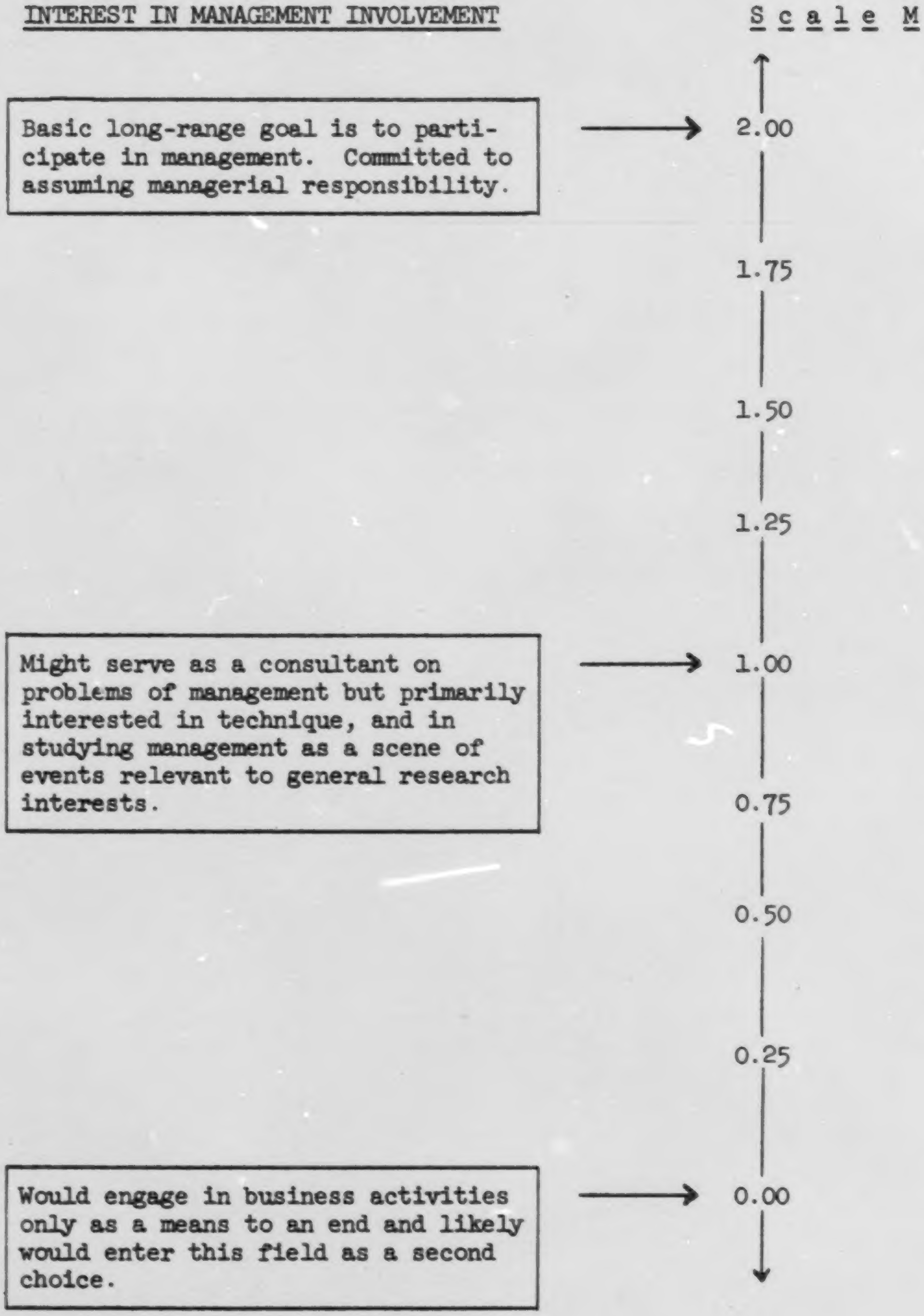
Faculty members in 12 business schools were asked to judge what quality was illustrated by each example in one packet. This procedure tested the validity of the original assignment of an example to a particular quality. Examples were eliminated if there was no clear agreement among the majority of judges as to the quality it illustrated. Qualities were eliminated if examples were not consistently reassigned to the quality for which they were originally designed. This was the most important step of the entire procedure since it insured that the retained examples provided unambiguous illustrations of a quality. In addition, each quality became defined more concretely by the set of examples retained to illustrate it. A copy of the judges' instructions is provided in Appendix B.

A total of 82 judges from the 12 schools returned data. On the average about 20 judgments were obtained for each example, with the number of judgments per example ranging from 10 to 27. The distribution of allocations across qualities was obtained, and the percentages of judges assigning an example to the modal quality were computed.

Determination of the Level of a Quality Illustrated by Each Example

In addition to allocating the examples he received to a particular quality, each judge rated his examples as to level of the quality illustrated. The judgment of level was made in relation to the general statements defining high, medium, and low levels of performance for the quality. An example of the forms used by the judges is shown in Figure 1. An example of the lowest level of a quality might be assigned a value of 0.0, the highest level a value of 2.0, and intermediate levels corresponding values between these extremes. The distribution of judgments made by those assigning an example to the modal quality was obtained, as well as the mean scale value for each example. Examples were eliminated for which there was no clear agreement as to the degree of a quality illustrated.

From the survivors, examples were chosen to illustrate different levels of each scale, an effort being made to "pin down" the ends of each scale as well as several levels in between. As a final step, a pool of additional items was created to augment the selected examples where gaps were found in the coverage of each scale. These supplementary items were screened with


INTEREST IN MANAGEMENT INVOLVEMENT
Scale M
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00

Basic long-range goal is to participate in management. Committed to assuming managerial responsibility.

Might serve as a consultant on problems of management but primarily interested in technique, and in studying management as a scene of events relevant to general research interests.

Would engage in business activities only as a means to an end and likely would enter this field as a second choice.

Figure 1. Example of forms used in judging level of quality illustrated.

the assistance of ETS staff members in the same way the original pool was screened by the business school faculty members. The end product of the four stages was a set of examples illustrating different levels of performance for each of several qualities.

Results

Determination of Qualities

Scales were developed for 15 qualities. Each of these qualities is described briefly in Table 1. Even though some qualities were eliminated for lack of sufficient behavioral examples, the authors feel that these qualities provide a reasonably comprehensive coverage of relevant dimensions for evaluating performance of graduate students in business, although no claim is made that this set of qualities is uniquely most appropriate or complete. It was generally agreed, however, that most of these qualities would be considered important in a number of schools. Also, examination of the scales suggested that a number of other qualities recommended for consideration were represented by various combinations of the present qualities.

Although the scales generally represented desirable qualities, the investigators attempted to avoid value laden words. From the beginning of the project the assumption was made that each school which might make use of the scales would review the list and decide for itself which qualities were most in keeping with its educational goals. One school might decide, for example, that Technical Knowledge is of key importance, while another might eliminate it from the list.

A crude subjective attempt was made to place the 15 qualities within a general framework. The first two, Self-Development and Interest in

Table 1

Initial Qualities Descriptive of Performance for Graduate Students in Business

Goal Orientation

1. Self-Development (SD)--having clearly defined plans for modification and realization of long-term goals.
2. Interest in Management Involvement (M)--more interest in management than in other areas.

Resources

3. Perspective and Breadth of Knowledge (PB)--alert to broad social, political and economic implications of decisions and actions.
4. Technical Knowledge (TK)--having technical facts and basic principles necessary to handle specific problems confined to business context.
5. Critical Awareness (CA)--alert to environment cues and events, sensitive, and insightful especially in regard to social reactions. Unbiased.

Processing

6. Problem Analysis Ability (PA)--orderly, analytic exploration of problems and generation of alternatives, synthesis.

Decision-making

7. Resolution and Decisiveness (RD)--courage, self-confidence and constancy in the face of difficulty and uncertain outcomes. Willingness to make decisions.

Execution

8. Planning for Implementation (PI)--appropriate allocation and scheduling of resources and anticipation of changes in environment.
9. Communication Skill (CS)--clarity and precision in both written and verbal communication.
10. Managerial Skill (MS)--able to delegate responsibility and get things done through others.

Styles

11. Enthusiasm (E)--reacts spontaneously to people and problems. Responsive and vibrant.
12. Initiative (I)--self-starter, active rather than passive and reactive.
13. Persistence and Drive (PD)--energetic and capable of prolonged attention to tasks.
14. Flexibility (F)--receptive to new ideas, willing to change and to experiment. Inventive and adaptable.
15. Consideration (C)--mindful and understanding of needs, feelings, and rights of others.

Management Involvement, were considered to represent fairly general goal orientations.

The next three qualities relate to resources available to the individual, especially his present knowledge and ability to obtain new information of relevance by being selectively attuned to the environment.

The next quality, Problem Analysis Ability, relates to the processing of all relevant information in relation to goals and constraints in a given contest. Resolution and Decisiveness deals with decision-making and emphasizes willingness to make decisions. It was intended to be independent of problem analysis ability. In fact, it is not impossible for a person to show high resolution and decisiveness while making the wrong decision.

The next three qualities relate to effective implementation of decisions. They involve planning, and communication skill is a major tool. The last five qualities were called styles and represent characteristic ways of performing which could cut across any of the preceding qualities. To a large extent these stylistic qualities represent general personality and motivational traits.

The intended distinction between two of the stylistic qualities needs comment. Initiative and self-reliance are characteristic of the self-starter, the person who finds tasks for himself and pursues them without prodding from others. Persistence and drive represent a quality which it is important to distinguish from initiative. It is not difficult to imagine instances of persistence in the absence of initiative. The general definition for persistence and drive attempted to emphasize the breadth and generality of persistence in contrast to very narrow and compulsive behavior.

The general definitions for each of the qualities (with the exception of two which were later eliminated) are shown in the boxes on the left hand side of each of the scales presented in Appendix C. The general definitions for Interest in Management Involvement and Managerial Skill are presented in Appendix C following the other scales.

Examples of Specific Behaviors

The examples which were obtained from the various sources are provided for reference purposes in Appendix A. Those examples which were retained as anchors to illustrate particular levels of a quality can be seen on the right hand side of the appropriate scale reproduced in Appendix C. One of scales, Initiative, is shown in Figure 2.

A pervasive weakness of the examples was that they were too general, too ambiguous, and too limited in representativeness. Nevertheless, many good examples were found.

Reallocation and Judgment of Level

Table 2 shows the average agreement in modal assignment for each quality separately. The column labeled "Initial Pool" refers to all of the items having a modal assignment for a given quality and therefore constituting the pool of potential examples to illustrate that quality. The column labeled "Retained Examples," refers to those examples selected as anchors for particular scales. Judgments of the level illustrated by a given example were tabulated and averaged for all those assigning the example to the modal quality. In most instances there was good agreement in the judgment of level; the judgments usually clustered within three adjacent intervals of the scale.

INITIATIVE

Scale I

Voluntarily takes steps to accomplish tasks or solve problems without impetus from other persons. Able to anticipate imminent problems correctly and to work toward their solution as much as possible without reliance on others, working on the task without constant supervision. Sometimes described as being "inner directed." → 2.00

2.00 This student could be expected to find his own thesis or term project subject, without the help of a faculty member, and to proceed in the initial stages of the study without specific guidance from a faculty member.

In business games or group learning efforts, this student could be expected to evaluate the problem independently and to take the lead in suggesting methods of solution.

1.75

Without any specific suggestion by anyone, this student could be expected to make an appointment to discuss a question he had about a point a professor made in a lecture.

1.50

1.25

You would expect this student to find sources of information beyond those suggested initially by the professor, but he would require some general direction beforehand.

Moderately self-directed; occasionally requires general direction and encouragement to begin tasks. → 1.00

0.75

You would not expect this student to volunteer in class discussions, though he might be well-prepared when called on.

0.50

When required to prepare an assignment on a topic of his own choosing, this student would require an instructor's help in finding a topic and later on would have to be checked on to see that the job got done.

0.25

In conducting a research project, this student could be expected to depend upon someone else for the suggestion of the topic, definition of the problem, and direction.

Unable to anticipate problems. Requires frequent supervision and reassurance. Finds it very difficult to work on his own. → 0.00

Figure 2

Table 2

Average Agreement in Modal Allocation[a] of Examples by Quality

Quality	Initial Pool[b]		Retained Examples	
	N	%	N	%
Self-Development (SD)	20	64	7	80
Interest in Management Involvement (M)	11	68	--	--
Perspective and Breadth of Knowledge (PB)	13	70	5	80
Technical Knowledge (TK)	10	58	3	91
Critical Awareness (CA)	14	59	5	77
Problem Analysis Ability (PA)	26	58	5	84
Resolution and Decisiveness (RD)	19	71	6	89
Planning for Implementation (PI)	15	68	5	85
Communication Skill (CS)	16	87	5	97
Managerial Skill (MS)	11	65	--	--
Enthusiasm (E)	15	67	6	81
Initiative (I)	22	60	7	79
Persistence and Drive (PD)	11	70	7	78
Flexibility (F)	12	62	7	74
Consideration (C)	24	71	7	92
Average	15.9	67	5.8	84
Total	239		75	

[a] The "modal allocation" is that quality to which the largest number of judges assigned a particular example.

[b] The percentage given for each quality is the average percent agreement among the judges for the examples designed for that quality.

The general results from the reallocation were encouraging. Averaging across all examples, 67% of the judges agreed on the modal assignment of examples. Agreement ranged from 23% to 100% for specific examples. The average agreement in assignment to modal quality for items retained as anchors for the scales was 84%.

Examples for a given quality were not always well distributed across all levels of the quality. It appeared easier to get illustrations of very high and very low levels of a quality and relatively more difficult to obtain illustrations of the less extreme levels. As described earlier, less extreme examples were developed through revision of initial examples but, even so, a look at the anchoring examples in the scales in Appendix C shows that there is inadequate coverage of some levels of a few of the qualities.

Judging from the modal agreements the qualities chosen were distinguishable and behavioral examples were found which provided relatively unambiguous illustrations for particular qualities. For most of the scales it was possible to find five or more items for which there was at least 80% agreement in reallocation, and in addition were adequately distributed as to level. Quite often there were examples that showed high agreement but were at about the same level on a scale. In such cases final selection took into account the content of the different examples in an attempt to introduce a range of behaviors in the illustrations.

Detailed results of the reallocation and judgment of level are presented for each item and quality in Appendix D.

Two qualities (Interest in Management Involvement and Managerial Skill) were eliminated primarily because of the content of the examples assigned to them. Usually these examples were very general and did little more than restate the general definitions of the qualities. Also, managerial skill was usually interpreted very broadly and was seen as a combination of a number of other qualities.

Thus, this first phase resulted in the development of 13 scales ready for pilot testing in the schools.

Part II: Development of Biographical Data Form and Pilot Testing

Prior to the pilot testing it was necessary to develop a questionnaire for collecting biographical information from the students who were rated. This was for two reasons: first, to augment undergraduate grades and test scores as predictors of graduate school performance and, second, to have a means of investigating the background and personal characteristics of the students receiving high and low ratings. The major original purpose of this line of research was to investigate ways of broadening the basis of graduate school selection. This required not only more comprehensive criteria (grades _and_ faculty ratings) but also more comprehensive predictors (previous grades, test scores _and_ biographical information).

Work by Taylor and his associates (Taylor & Ellison, 1964; Taylor & Holland, 1964), Smith, Albright, Glennon, and Owens (1961), England (1961), Klein and Owens (1965) and a conference report edited by Henry (1966) indicated that predictability could be increased by the use of biographical data with a variety of criteria and settings. As mentioned earlier, however, Hilton and Myers (1967) reported that such potential did not materialize when GPA was the sole criterion. They found that the particular biographical data they used could predict this criterion, but that such data added little beyond that provided by conventional aptitude tests. They concluded that a broader criterion than that provided by grades was necessary in order to realize the predictive validity of biographical data.

Procedure

Background Data Questionnaire

The Background Data Form (BDF) consists of a compilation of the more objectively scorable items on the application blanks currently in use by 17 graduate schools of business administration and of other items which a review of the literature suggested might be of value. A specimen copy of the 132-item questionnaire is included in Appendix E.

Through inspection of the frequency data and item intercorrelations, the 109 BDF variables were reduced to 71, with lack of meaningful range being the primary reasons for elimination of variables. The 71 variables were then factored, with 1's in the diagonal. The loadings of each of the biographical items on the principal axes are shown in Table 3. Finally, the one or two variables loading highest on each axis were selected for a stepwise multiple regression analysis in which undergraduate grades, ATGSB scores, and biographical information were the predictors and graduate school point average (GPA) and faculty ratings were the criteria.

Participants

Two graduate schools of business administration participated in the pilot study, one located in the Midwest with a first-year class enrollment of 290 and the other located in the East with 90 first-year students. Each faculty member rated 10 of his or her first-year students. The selection of the students was random except that each student had to be rated by two different faculty members. In the larger of the two schools 130 ratees were assigned to 26 faculty raters, and in the smaller school 60 students were assigned to 12 faculty raters. The use of the rating scales was described to the faculties in a group meeting for each school.

Table 3

Loadings of 71 Biographical Items on Principal Axes

	Principal Axes									
Variable	1	2	3	4	5	6	7	8	9	10
1 Age	.79	-.29								
2 Years married	.76	-.29								
3 Rank in military (Private = 1 to Captain = 5)	-.26				.30	.46	-.26	-.70		
4 No. of nonphysical hobbies				.32						
5 No. of semi-active hobbies				.44					.28	
6 No. of physical hobbies		.25	.26	.39		-.31				
7*No. of hobbies pursued as an individual			.29	.60				-.28	.27	
8 No. of small group hobbies		.29		.32						
9 Mean no. of years each hobby pursued			.32	.56						
10 Mean hours per month on each hobby				.41	.27					
11 No. of memberships in business org's							.26			.32
12 No. of nonbusiness memberships			.45							
13 No. of nonbusiness community org's										
14 Interest in teaching and research	.36					.32		.31		.31
15 No. of books owned	.25				-.28					
16 %which are fiction										
17 No. of applied subjects represented by books			.32		.34		.28			
18 No. of business subjects			-.34	.36						
19 No. of science, math. & Eng. subjects			.40							
20*No. of soc. sci. & humanities subjects				.30	-.45					

---

*Asterisks denote variables included in stepwise multiple correlations.

Table 3 (cont'd)

	Principal Axes									
Variable	1	2	3	4	5	6	7	8	9	10
21 Size of home town										
22 Recency of decision to attend grad. school	-.49									
23 Days ill in last two years			.28		-.42				-.26	
24*No. of illnesses			.31		-.40					
25 General health									.27	
26 Father's education	-.29	-.33			-.26			.31		
27 Mother's education		-.25	.27			.25				
28*No. of brothers										.26
29 No. of sisters			-.26				-.29	.34		
30 No. of older siblings	.25									
31 GPA in first semester					.25					
32 Spouse's education						-.46			-.26	
33*Level of father's occupation	-.25	-.42						.26		
34 Level of mother's occupation						.32				
35*H.S. attended, public (0) or private (1)									.63	
36 Size of H.S. class	-.30								-.38	
37 No. of colleges attended				.26						-.47
38*College attended in same state as grad school (1) or not (0)				-.26		-.35				.50
39 Business degree (1) or not (0)			-.55	.41						
40*Any bus. majors or minors (1) or not (0)	-.25		-.63	.32						
41 Technical or applied subjects taken (1) or not (0)			.35				.36			
42 No. of H.S. academic awards						.31				
43 No. of other H.S. awards							-.38			
44 No. of coll. academic awards		.32					.37	.34		
45 No. of other coll. awards							-.36			

*Asterisks denote variables included in stepwise multiple correlations.

Table 3 (cont'd)

Variable	Principal Axes 1	2	3	4	5	6	7	8	9	10
46 Grades accurately reflect ability (1) or not (0)							.36			
47*Plan to go on for Ph.D. (3) or uncertain (2) or not (1)	.27					.41		.36		
48 No. of bus. club memberships				.26		.27				
49*No. of social club and fraternity memberships							.32			
50 No. of bus. honorary memberships								.33		
51 No. of nonbus. honoraries		.43						.33		
52 No. of offices held						.27				
53 No. of individual sports										
54*No. of team sports	-.29				.36		-.37			
55 Years as manager or captain							-.36			
56 Amt. of conscious career planning				.34						
57*Original confidence in career choice								-.30		
58 No. of summers in school or work	-.34	.25								
59 No. of summers in travel, etc.									.26	
60 No. of school years employed		.41					-.28			.40
61*Hrs. employed per week when undergraduate	.29	.38					-.31		.26	.38
62 Years of full-time employment	.82									
63 Average monthly salary	.64									
64 Debt acquired as undergraduate		.54			-.27					
65 Amount borrowed for grad. work	.29	.48								-.34

*Asterisks denote variables included in stepwise multiple correlations.

Table 3 (cont'd)

	Principal Axes									
Variable	1	2	3	4	5	6	7	8	9	10
66*Additional debt expected	.26	.49				.30				-.25
67 Amount owed for consumer goods		.29				-.35				
68 Total current assets		-.43	.30							
69 Total current debts	.25	.60								
70 Financial gifts expected	-.44	-.28								
71 Amount life insurance carried					.35					

*Asterisks denote variables included in stepwise multiple correlations.

Rating Procedure

Copies of a manual (see Appendix F), the anchored rating scales (Appendix C), and a record form on which to record incidents of performance (Appendix G) were given to each rater. The faculty were asked to make a running record, preferably after each class or at least once a week, of the incidents they had noted on each of their 10 ratees. The faculty were told that they might go out of their way to call upon their ratees in class if they wished, or confer with them after class, but that the chief reliance was to be placed on natural incidents which came spontaneously from class interaction with these students. In addition, the faculty were told that they did not need to find or record incidents for each scale for each student. They were to consider the rating scales as convenient locations to record such incidents as were observed if these incidents fit one or more of the scales. Incidents might be recorded and reported which did not fit the scales developed, and some scales and some students might have no incidents recorded for them.

Three levels of specificity of ratings were noted in the use of the anchored rating scales. Raters who complied most fully with the directions for the use of the scales reported several separate incidents on each ratee on any one scale and rated each of these incidents separately. Then, complying with the instructions, the raters gave an overall composite score, forming their own impression of the central tendency of the separate incident ratings for that ratee on that one scale.

Other raters who complied less fully with the instructions may have indicated that several incidents occurred, mentioning behavior such as "written work often turned in late," but did not rate the incidents themselves.

The third and least specific level of rating was represented by those raters whose ratings were made on a global basis only. These raters each gave a summary rating for one ratee on one scale but did not report specific incidents. While some raters reported less confidence in such summary ratings, others believed that they could make these accurately by drawing upon impressions of a variety of contacts with the students over the semester.

The formal observation period for the recording of observations was about 10 weeks for each of the two schools. All faculty-member raters were contacted by phone about 3 weeks after the observation period started, to answer any questions about procedure that they might have. The telephone contact also served as a reminder and as a motivator for some of the faculty. Some faculty members did not participate despite repeated telephone contacts, while other faculty felt that the observation period was too short or that 5 students should have been observed instead of 10.

At the end of the observation period and before final grades were calculated for these ratees, the faculty raters were also asked to make two other judgments about their ratees: an overall impression of their performance, and an estimation of how well acquainted they were with the ratee. Guidelines were provided on the rating scale for these judgments to further consistency among the judges.

Other "control" data collected on the raters themselves were the number of years of teaching experience, the size of the class in which they observed the ratees, and the final course grade the rater gave the ratee. Control data on the ratees were also gathered in the form of ATGSB Verbal, Quantitative, and Total test scores, and the total grade point average for the semester (which, of course, included the rater's individual course grade).

The results to be reported are based on a pooling of the data from the two schools. In most respects the mean scores for the schools were quite similar. The mean undergraduate GPA of the students enrolled in each school were 2.61 and 2.77 with standard deviations of .32 and .36. Thus they differed by approximately one-half a standard deviation. The mean ATGSB-Q scores differed by 5% of the standard deviation, and the ATGSB-V by 20%. The mean graduate GPA's were 2.39 and 2.42 with standard deviations of .48 and .55. Generally the mean faculty ratings were similar at the two schools, differing by fractional amounts of the standard deviation within either school. These results along with the general observations of similar admissions practices and standards at the two schools seemed to justify pooling the data although it was recognized that pooling introduces the possibility of confounded results.

Results

A total of 397 students at the two schools filled out the Background Data Form (BDF). Faculty participation as raters was noticeably poorer at the smaller of the two schools, but for the total of 37 raters asked to participate (one of the original 38 raters died) 19 (51 percent) gave at least 10 ratings which complied fully with the request for separate incidents individually rated and then made into a composite, 10 (27 percent) did not participate at all, and the other 8 raters were evenly split between those who gave a composite rating backed up by the number of incidents, and those who gave composite scores only. Thirty raters gave judgments on the importance of the 13 rating scales, out of a total of 37 who could have participated, with 21 coming from the larger school and 9 from the smaller school.

Reliabilities

One reason for gathering the rating data was that the comparison and combination of judgments from two raters on each ratee would provide an estimate of interjudge reliability and enable it to be increased. The number of students with two ratings varied from scale to scale, ranging from 46 to 81. With 10 faculty members not participating, however, a large, presumably non-random fraction of students did not have two ratings. The reliabilities reported in Table 4 must, therefore, be regarded as rough approximations. They are intraclass correlations modified to estimate the reliability of the sum of the ratings of two judges (Guilford, 1965, p. 299). The reliabilities indicated that on some scales--Flexibility for example--the faculty raters differed so greatly in their rating that we should question using these scales in future research.

Intercorrelations

The first analysis of the data was a matrix of produce moment correlations among all the variables of the study. Table 5 shows the intercorrelations of the 13 scales. The correlations are based on differing N 's, with most of the N 's 80 or higher and the range from 54 to 353. Inspection of the intercorrelations suggests that one cluster might be called "Technical Problem Solving," consisting of technical knowledge, problem analysis, and critical awareness. A second cluster might be called "Drive" and would consist of persistence, initiative, enthusiasm, and self-development.

In addition, the average level of importance which the raters attached to each of 13 scales was obtained. (Each faculty member ranked the scales and the ranks were converted to a scale with a mean of 50 with standard deviation of 10.) Table 6 shows these rankings on the left, while the columns on the

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Table 4

Agreement Between Judges for Each Rating Scale

(N's = 46 to 81)

Scale	Name	r_{kk}
1	Self-Development	.07
2	Perspective	.71
3	Technical Knowledge	.72
4	Critical Awareness	.53
5	Problem Analysis Ability	.70
6	Resolution	-.02
7	Planning	.39
8	Communication Skill	.41
9	Enthusiasm	.24
10	Initiative	.58
11	Persistence and Drive	.33
12	Flexibility	-.65
13	Consideration	-.04

Table 5

Intercorrelations of Qualities Rated Sample: Pooling of Both Schools

Quality Rated	1 Self-Devel.	2 Perspective	3 Tech. Knowl.	4 Crit. Aware.	5 Prob. Anal.	6 Resol.& Dec.	7 Planning	8 Com. Skill	9 Enthusiasm	10 Initiative	11 Persistence	12 Flexibility	13 Consideration
1. Self-Development		54	41	36	43	50	25	38	58	66	64	31	40
2. Perspective & Breadth of Knowledge			66	71	72	61	23	74	51	50	21	45	18
3. Technical Knowledge				53	80	52	35	56	34	49	35	21	04
4. Critical Awareness					67	48	42	60	44	56	42	58	46
5. Problem Analysis Ability						55	42	75	47	53	40	31	16
6. Resolution and Decisiveness							31	53	40	47	26	44	16
7. Planning for Implementation								35	40	46	58	38	49
8. Communication Skills									44	42	26	47	16
9. Enthusiasm										62	56	44	47
10. Initiative											76	22	59
11. Persistence & Drive												21	58
12. Flexibility													49

Table 6

Importance of Rating Scales to Faculty, and Correlations of Ratings and Certain Other Variables with First Semester GPA

Quality Rated	Faculty Ratings of Importance		Correlation with First Semester GPA			
					Ratings	
	$\bar{X}$	S.D.	r	N	$\bar{X}$	S.D.
1. Self-Development	49.1	10.8	.17	84	1.3	0.5
2. Perspective	51.5	9.9	.31	77	1.2	0.4
3. Technical Knowledge	48.3	8.7	.51	99	1.3	0.4
4. Critical Awareness	50.1	10.4	.38	83	1.3	0.4
5. Problem Analysis	60.9	8.3	.48	117	1.3	0.5
6. Resolution	46.3	8.5	.25	83	1.3	0.5
7. Planning	48.7	9.1	.26	86	1.4	0.4
8. Communication	52.1	7.8	.25	115	1.3	0.4
9. Enthusiasm	48.9	7.4	.22	120	1.2	0.5
10. Initiative	54.8	5.9	.27	92	1.2	0.5
11. Persistence	52.4	8.0	.37	85	1.4	0.5
12. Flexibility	46.5	6.5	.15	75	1.2	0.4
13. Consideration	41.5	7.4	.20	89	1.3	0.4
14. Overall Ratings	--	--	.44	136	1.1	0.4
15. Degree of Acquaintance	--	--	.12	165	0.9	0.6
16. Grade from Rater	--	--	.40	173	3.0	0.9
17. Rater's Class Size	--	--	-.20	173	37.9	18.4
18. Rater's Years of Teaching	--	--	.05	173	15.3	10.8
19. First Semester GPA	--	--	--	251	2.4	0.6

right of the table show the correlations of the ratings with first semester GPA.

By inspection of Table 6 there is a tendency for those qualities ranked higher in importance to correlate higher with GPA. One of the goals of this study, however, was to identify rating variables, if any, that are reasonably independent of grades and are predictable from biographical data. If a positive correlation of .30 is taken as a division line to identify those variables that are most closely related to grades, the rating variables that fall below this cutting point and are also rated close to or above the average of all the variables in importance are variables 1 (Self-development), 7 (Planning), 9 (Enthusiasm), and 10 (Initiative). Variables 6 and 13, Resolution and Consideration respectively, both meet the criterion of having correlations with GPA below .30, but both are also the lowest in rank order of general importance across all the raters. It is interesting to note that variable 3, Technical Knowledge, rates somewhat below the average in judged importance and still provides the highest correlation (+.51) with GPA.

The correlations of the rating scales with the "control" variables can be summarized as follows:

1. The scales have small positive correlations with "Degree of Acquaintance" (of the faculty member with the students rated).
2. Moderate positive correlations (.21 to .61) with the grade received in the rater's course.
3. No correlation with the size of the ratee's class.
4. Small positive correlations with the rater's years of teaching experience.
5. No correlation with ATGSB Verbal scores.

6. No correlation with ATGSB Quantitative scores, with the exception of Technical Knowledge and Problem Analysis Ability which were correlated .41 and .31 respectively.

As an example of the correlations of one of the rating scales with the biographical variables, Table 7 is provided. In view of the complex interrelationships among biographical data and the exploratory nature of this pilot study, no attempt will be made to interpret these zero order correlations.

Stepwise multiple regressions. Finally, to explore the possible value of the biographical data in predicting the rating scales and grade point average, stepwise multiple regressions were computed using 15 selected biographical variables, ATGSB-Q, ATGSB-V, and undergraduate GPA as predictors. Undergraduate GPA, ATGSB-Q, and ATGSB-V were entered into the prediction, in that order, before the biographical data were allowed to contribute to the prediction. This was done since the primary interest was to ascertain whether biographical data might add significantly to the prediction provided by test scores and undergraduate GPA. The reader should keep in mind that the results are not cross-validated and, thus, that there is no way of knowing how much the sifting of the 15 biographical variables may have capitalized on fluctuations unique to the sample in hand.

Table 8 shows the results of the stepwise prediction of graduate school first semester GPA for the combined sample of both participating schools. Undergraduate GPA, ATGSB-Q and ATGSB-V provided a multiple correlation of .39. When biographical data were included three variables (father's occupation, number of social clubs and fraternities, and age) increased the multiple R to .52. Their regression weights were comparable to those of undergraduate

Table 7

Variables Which Correlate with Planning for Implementation Scale

Variable	r_{xy}	N	$\bar{X}$	S.D
7. No. of hobbies pursued as an individual	.22	87	1.0	1.0
9. Mean no. of years each hobby pursued	.20	82	3.2	1.9
28. No. of brothers	-.34	86	0.8	0.8
29. No. of sisters	.24	84	0.9	0.9
31. GPA in first semester	.26	86	2.4	0.5
38. College attended in same state as grad school	-.23	84	0.4	0.5
46. Grades accurately reflect ability or not	.20	80	1.9	1.0
47. Plan to go on for Ph.D. or uncertain or not	-.35	80	0.4	0.6
57. Original confidence in career choice	.40	84	2.3	1.4
60. No. of school years employed	.21	86	1.6	1.5
61. Hrs. employed per week when undergraduate	.22	86	23.3	29.6

Table 8

Standard Regression Weights and Multiple Correlations

Criterion: GPA

(N = 171; both schools combined)

Undergrad. GPA	ATGSB Q	ATGSB V	Father's Occupation	No. of Social Clubs and Fraternities	Age	R
.16						.16
.17	.34					.37
.18	.29	.13				.39
.21	.26	.10	.30			.49
.21	.27	.11	.28	.16		.51
.21	.29	.11	.28	.16	.10	.52

GPA and the test scores. The suggestion is that having higher status parents, being sociable, and being more mature enhances one's academic grades. Is this because such students are actually more accomplished, or are these measures indirect measures of ability which supplement test scores and previous grades as measure of ability, or is there a bias in assigning grades in favor of such students. At this point it is impossible to tell; the question needs further research.

Table 9 shows the prediction of Perspective by means of the same procedures as in the Table 8 analysis. "Same State" is a measure indicating whether the graduate school attended was in the same state as the student's undergraduate school (scored 1) or in another state (scored 0). "Conf. Career" reflects how confidently the student regards his current career choice. In the final step (bottom row of table) one can see that GPA and the test scores contribute to the prediction relatively less than several of the biographical variables, and that some different biographical variables emerge as predictors. The new predictors may, however, be alternative measures of the same underlying variables. "Number of brothers," for example, is probably a reflection of socioeconomic status in the same way father's occupation is. It has frequently been found that less affluent families have more children. In any case, the dynamics are no doubt complex and do not warrant further speculation here.

The next criterion, Consideration, was selected for discussion since it was relatively independent of the other criteria and also was one of the less reliable criterion measures (as far as between judge agreement was concerned). Nevertheless, the multiple correlation coefficients shown in Table 10 are as high as those of most of the other criteria. In the final step,

Table 9

Standard Regression Weights and Multiple Correlations

Criterion: Perspective

(N = 171; both schools combined)

Predictors										
Coll. GPA	ATGSB Q	ATGSB V	No. of Bros.	Same State	Age	Conf. Career	Father's Occ.	No. of Clubs	No. of Illnesses	R
.16										.16
.16	.11									.19
.17	.08	.09								.21
.15	.12	.05	-.33							.39
.14	.13	.05	-.36	-.29						.48
.13	.18	.05	-.36	-.28	.19					.52
.13	.17	.07	-.41	-.29	.21	-.17				.54
.11	.18	.09	-.42	-.33	.21	-.19	-.16			.56
.11	.19	.10	-.42	-.32	.21	-.21	-.18	.14		.58
.12	.20	.10	-.40	-.33	.23	-.21	-.19	.15	.12	.59

Table 10

Standard Regression Weights and Multiple Correlations

Criterion: Consideration

(N = 171; both schools combined)

Predictors										
Coll. GPA	ATGSB Q	ATGSB V	Hrs. Work	Plans Ph.D.	Iso. Hob.	Priv. Sch.	Father's Occ.	Age	No. of Bros.	R
--										--
--	--									--
--	--	-.11								.12
--	--	-.12	.27							.29
--	--	-.14	.27	-.21						.36
--	--	-.14	.28	-.22	-.21					.41
--	.08	-.13	.29	-.20	-.20	.17				.45
--	--	-.14	.32	-.21	-.20	.16	.15			.47
--	.10	-.15	.31	-.20	-.21	.17	.15	.14		.49
--	.12	-.16	.31	-.17	-.22	.17	.15	.15	-.13	.51

college GPA had no weight, ATGSB-Q a small positive weight and ATGSB-V actually had a negative weight. Also the biographical predictors were mostly different from those which emerged from the other analyses. ("Iso. Hob." is the number of hobbies which the individual pursues independently. "Priv. Sch." indicates whether the student attended an independent (1) or a public (0) secondary school.)

Table 11 shows what happened when a summary criterion was constructed by adding together the rating scale scores and first semester GPA. Age emerged as the single best predictor followed by No. of Brothers and Undergraduate School in Same State. Undergraduate GPA and the test scores contributed relatively less to the prediction.

As the last step, analyses similar to the preceding were computed for each participating school separately. In view of the relatively small samples involved the results will not be reported here other than the observation that the effective predictors tended to be the same in each school, although there were some which were unique to each school. The regression weights differed markedly, however.

Discussion and Conclusions

The main objective of this work was to develop a set of scales which would usefully supplement academic grades as measures of graduate school attainment. The authors' working hypothesis was that if the scales were truly comprehensive--not merely a halo of academic grades--then biographical information would usefully supplement past grades and test scores as predictors of a combined criterion made up of grades and ratings. Judging from the low

Table 11

Standard Regression Weights and Multiple Correlations

Criterion: Summary Criterion[a]

(N = 171; both schools combined)

	Predictors						
Undergrad. GPA	ATGSB Q	ATGSB V	Age	No. of Bros.	U.G. Sch. in Same State	U.G. Social Science Major	R
.13							.13
.13	.09						.16
.14	.06	.08					.17
.14	.14	.07	.32				.36
.13	.18	.05	.32	-.26			.44
.12	.18	.05	.30	-.29	-.22		.49
.10	.16	.06	.31	-.29	-.23	-.08	.50

---

[a] Each rating and also GPA was standardized with a mean of 50 and a S.D. of 10. The summary criterion is the average of these scores. No summary criterion was computed when three or more of the part scores were missing.

positive correlations between the scales and graduate school grades the technique of behaviorally anchoring the rating scales did result in their being adequately independent of grades. In other words the faculty did not routinely assign high ratings to good students and low ratings to weak students. In addition, the mixed pattern of relationships among the scales supports the view that distinctions were made among the scales. The faculty raters apparently paid attention to the definitions of the scales. This conclusion is also supported by an inspection of the rating sheets submitted by each faculty member; seldom did individual students receive exactly the same rating on all scales. It did happen, however--in perhaps 10% of the cases--which underscores the importance of soliciting faculty raters who are willing to make thoughtful discriminations in assigning ratings.

Whether the scales have reliability and validity is another question. About half of the scales had adequate reliability in the sense of between judge agreement, although missing data left the reliability estimates subject to question. In any case the correlations with performance and biographical data suggest that the scales do have validity. Generally the correlations were about the magnitude and direction one would expect on the basis of previous research. The most suggestive evidence, however, derives from the stepwise multiple regressions. By and large the multiple regression coefficients for the prediction of separate scales were as high as those for the prediction of grades. Even these must be interpreted with caution, however. When a large number of variables are sifted--as in this pilot study--it is difficult to estimate how much one has capitalized on chance relationships. We will have more confidence in the validity of the scales when, in future research, they are used in a variety of schools and continue to exhibit validity.

The more certain outcomes of this developmental effort concern the characteristics and use of the scales. Generally the scales were well received, as a substantial improvement over conventional rating techniques. The records and comments provided by the faculty raters did, however, point to a number of minor revisions, mostly resulting from ambiguities in the definitions of qualities and behavioral examples provided. Appropriate changes will be made in the scales in the next phases of this line of research.

Also it was clear that changes are necessary in the rating procedure, chiefly in the number of ratings each faculty member is asked to make. Accordingly it was decided to reduce the number of scales from 13 to 7 and the number of students each faculty member would be asked to rate from 10 to 5. Which seven scales were selected and the basis for selection will be described in detail in a subsequent report.

All the scales may be useful in future research, however, depending on the specific purposes of the research. A possible exception is the Flexibility scale. As noted earlier the agreement between the judges was so low--actually it was negative--that the scale should be redone before it is used again, unless a more adequate check demonstrates it has more reliability than found here.

Certain steps in administering the scales are critical. The importance of full cooperation on the part of the raters cannot be overemphasized. The raters must be carefully instructed in the rationale and purposes of the scales. Prior to using them they should become thoroughly familiar with the scales, the general definitions of each quality, and the content of relevant behaviors used to illustrate the qualities. Finally, well in advance of the act of rating, the judge should know which students he is to rate in order that he can observe them over a period of several weeks, paying particular attention to incidents relevant to the qualities.

The Background Data Form proved to be satisfactory for the purposes of the research. A broad range of biographical facts were tapped. But in the future certain questions (e.g., in the area of personal accomplishments) should be added. It should also be reformulated to include a maximum number of multiple choice items presented in a way which would be largely machine scorable--to reduce the extensive clerical expense incurred in the research to date.

The analysis of the biographical data indicated that they are related in important ways to grades and to ratings. Certain data predict grades and other biographical facts, frequently different, predicted the ratings. Combined with undergraduate grades and ATGSB scores, biographical data show promise of increasing the prediction of graduate school grades and criterion ratings. To predict grades, a mix of undergraduate grades, ATGSB scores, and biographical data was used which was generally different from the mix of these variables which best predicted the rated personal qualities. Again, however, it must be pointed out that the combination of variables chosen is "best" only for the existing sample; some other set of predictors might well be superior in a cross-validation sample.

Future research should be undertaken with the following objectives:

a. To test the preliminary findings presented here on a much larger sample, more representative of range of business schools,

b. To refine the scales and the Background Data Form for operational use in the schools,

c. To test the effectiveness of revised rating procedures, and

d. To increase the validity of the findings and accuracy of predictive equations.

In conclusion, this report describes a five-year effort to develop a set of scales for use in graduate schools of business and industrial administration--scales which would not be subject to the shortcomings of traditional rating techniques. They represent several man-years of work on the part of the principal investigators and hundreds of hours of consulting and collaboration on the part of cooperating faculty members. Whether the effort was justified will only be known when the results of future research are in hand. In one sense, however, the scales stand by themselves in that they delineate a broad set of human qualities which the research staff and its faculty collaborators regarded as important, and these qualities are defined as precisely and concretely as current techniques would allow.

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Appendices

A Pretest Items

B Instructions for Judges

C Specimen Copy of Rating Scales, including Interest in Management Involvement and Managerial Skill

D Results of Reallocations and Judgments of Level

E Specimen Copy of Personal Background Data Form

F Specimen Copy of Manual Provided to Faculty Judges

G Specimen Copy of Record Form

Appendix A

The ATGSB Criterion Study Rating Scales
Pretest Items

These items are not numbered in any particular order.

1. This student would be able to manipulate correctly a mathematical procedure, but would not be able to state the major assumptions on which the method is based.

2. A case problem of moderate difficulty is being discussed in class. When faced with the need to make a decision without all the facts necessary, this student would be expected to acknowledge that he should have more information, but based on certain assumptions, to recommend a decision about the case.

3. This student would be unresponsive or bored, even during a lively simulation exercise in which several teams go bankrupt giving him the opportunity to sew things up.

4. This student could be expected to present an oral report in which he makes derogatory remarks about a certain economic theory without noticing that many members of the audience are highly identified with the theory.

5. You can always expect this student's case discussions to be presented in an interesting way which makes it appear that he considers every problem important.

6. Because of his knowledge of the needs and interests of the group, this student would sense immediately that his contribution to a discussion was being negatively received.

7. When faced with a research paper assignment, with many other demands on his time, this student could be expected to tackle the job enthusiastically, do a thorough search of the literature, work late for several nights, pass up social activities, finish the paper well ahead of the deadline, and submit a complete and well documented report.

8. This student could not state in an unambiguous way the key definitions and established procedures for organizing knowledge in a field covered by required courses in the curriculum.

9. When a job opportunity came along in an area which this student hadn't considered, he would quickly gather appropriate information, present himself well and receive and consider accepting an offer.

10. This student would prefer a summer job as a management trainee to a higher-paying technical job.

11. When someone in the class suggests a novel idea, you would expect that it would take this student some time to get used to the idea before he would consider its acceptance.

13. In conducting a research project, this student could be expected to depend upon someone else for the suggestion of the topic, definition of the problem, and direction.

14. You could describe this student as being bold in the way he attacks a problem. He would always be "up" on the latest developments in his field; he would be well read in the current literature.

15. This student could be expected to develop a list of several appropriate topics for an assigned research paper, but be unable to choose one from the list until instructed to do so by his professor after the deadline had passed.

16. The student would be unable to extract a set of possible problems which might be relevant from an ill-structured, although comprehensive description of a management situation.

17. This student would ask questions and seek information about the influence of a company's business beyond the confines of his own particular job.

18. This student could be expected to make suggestions on the modification of decisions or their implementation to increase their acceptance by those involved.

19. This student could be expected to be unreceptive to new ideas and proposals even in situations where previous methods proved inadequate.

20. In case discussions this student would not consider the social implications of suggested actions.

21. This student would show awareness of long-range implications of current wage and salary decisions, in labor relations, community relations, etc.

22. This student would volunteer during case discussion, but would give alternative recommendations as to two courses of action in a case problem. Each possible course of action would be based on an explicit, but different assumption which he states.

24. This student would meet a deadline in handing in a report, but the report would be below his usual standard if he also had to study for an exam in another course which occurred on the same day the report was due.

25. This student would be well versed in relevant geo-political, ethical, cultural and demographic differences between the U.S. business environment in less developed countries.

26. In an interview with a professor regarding certain personal matters concerning another student or faculty member, this student could be expected to mention the interview substance to no one even if pressed by his peers.

28. Would be extremely interested in his own progress and in making provisions to strengthen himself in areas of deficiency.

29. This student would use his time well, would be able to undertake activities on short notice.

31. This student's written work tends to be verbose, redundant, and unnecessarily elaborate.

32. Would make suggestions which his teammates would usually accept in a simulation exercise, research project or other class activity.

35. This student would make unwarranted assumptions based on mistaken information.

36. Usually, this student would try to get at the facts before giving an opinion.

37. This student could be expected never to have a clear idea of what he wants to do.

38. This student could come out of a critical discussion of a paper he had almost completed with enough ideas for several more papers.

39. This student could be expected to initiate and sustain a proposal for studying a small business opportunity providing there were no competing demands on his time in other courses during the period.

40. This student could be expected to know ways to be suggested for gaining acceptance of decisions through participation of others.

41. This student could only occasionally be expected to make a point in a case discussion which would be followed up by his classmates.

42. This student organizes his written reports in a clear and systematic fashion.

43. This student is convinced that the only problems which merit his attention are those "structured" situations which can be solved with existing analytical techniques.

44. This student could be expected not to take advantage of a unique opportunity to consult with a local expert in connection with a paper he was preparing on a difficult topic.

45. In a discussion on the merit of the school or major field he was studying, this student would back his choice objectively and without defensiveness.

46. You would expect this student to complete a detailed card file for material he had read even though it required sticking at a demanding, but unexciting task for several days.

47. This student would admit the need to consider the social responsibility on the part of a company when this is pointed out by others during a discussion of retirement policy.

50. This student would be in a quandary as to what to do if he found someone else sitting in his regular seat in a small class of 20 students.

51. If you employed this student as a reader and asked him to develop a list of specific points to be graded, he could be expected to come back to you after he had read several papers to ask you to provide an appropriate list.

52. This student seeks situations which are likely to yield greatest benefit in terms of reducing his individual weakness.

53. This student could be expected to give proper and systematic attention to the various aspects of a problem, and to recognize the pertinence of information from many sources.

54. Public relations aspects of problems would be considered irrelevant and might be ignored by this student.

55. This student would present material in a confused fashion so that his professor has to spend an undue amount of time trying to pierce through to the heart of what he is doing.

56. In class discussion, this student expresses his opinions freely, but is easily persuaded to change his views when others are critical of them.

58. In response to an urgent request, you could expect this student to prepare a broad report on a project with no delays for refinements even on the parts in which he is most interested.

59. You would expect this student to require constant prodding from classmates to begin work on his portion of a problem assigned to a team of three other students and himself.

61. Would expect this student to be careful to criticize action or suggested action rather than the individual involved.

63. This student could be expected to be in management school only to avoid going to work.

64. This student would listen quietly to a discussion, contributing nothing.

65. Could be expected to take charge of a discussion group, answer questions, and act in a mature manner.

66. Would be able to direct, command respect, and provide constructive suggestions.

67. This student would be a very effective speaker and would get his ideas over well to his audience. He could be expected to have an interesting and forceful way of presenting ideas.

68. This student would be able to assess the limitations of theories and principles from a discipline when they are applied to a management problem.

70. This student could be expected to cringe at the announcement of a field trip, to grimace at the mention of a group project.

71. This student would be able to integrate production, marketing, and finance viewpoints in a case problem involving a company diversification decisison, but would be unable to incorporate relevant government policy, social factors, and exogeneous technological trends.

72. This student speaks in a monotone in class and generally gives the impression of not being interested in the subject.

74. This student's written work would be interesting and easily read.

75. In writing a term paper, this student would present one point of view, but would not follow obvious leads to present a balanced report having two other points of view represented.

76. This student could be expected to do independent reading or research to check the validity of interpretations or evaluations which differ from his instructor's or classmates.

77. In a class discussion regarding a procedural issue which had been causing a problem, this student could be expected to offer an alternative procedure with presumptive merit without incurring the ire of anyone.

78. In writing research reports, this student might disregard the background and interests of his readers, and submit reports which are either not understandable or inappropriately elementary.

79. When required to prepare an assignment on a topic of his own choosing, this student would require an instructor's help in finding a topic and later on has to be checked on to see that job gets done.

80. In business games or group learning efforts this student could be expected to evaluate the problem independently and take the lead in suggesting methods of solution.

81. This student seldom misses deadlines.

82. This student would be handicapped by a "black and white" approach to all problems.

83. In recommending a course of action, this student would demonstrate awareness of all relevant dimensions of the problem enviornment, but would fail to consider whether his proposal was compatible with the individual responsible for implementing his suggestion.

84. On some cases, this student could not be expected to volunteer discussion, on others he could. This seems to be due to a difference in interest rather than in preparation.

85. This student would be congenial and pleasant, outgoing and spontaneous.

86. When he makes a comment, it often could be expected to influence or change the course of discussion.

87. This student could not be expected to ask probing questions, nor to challenge statements made in group discussions or seminars, nor to attempt to defend his own position.

89. This student would be at a loss if the room he was assigned for a discussion group was locked.

91. In a class discussion, this student usually comes up with most of the major points necessary for solution of a case, but he doesn't organize them well.

93. In stressful circumstances this student would be unable to decide on even routine and trivial things such as what to order for lunch.

95. When applying to graduate schools, this student would be expected to consider business schools.

96. In ill-defined "qualitative" situations, this student would use approaches in structuring problems which do not fit available techniques for rigorous solutions. He could delineate a useful way of viewing the problem, and where they fail to account for important problem characteristics.

97. This student would express himself well in recitations and comments in class; his points would be clear and his presentation convincing. Classmates would pay close attention to what he says.

98. Although the student might be sensitive to environmental forces affecting the way his performance is perceived by others, he would fail to assign priorities to different environmental forces in order to determine adaptive behavior.

99. You would expect this student to accept an assignment and work at it continually until completion.

100. This student's work would be obscure and full of mistakes, incomplete sentences and misspellings. It would be almost impossible to follow the line of thought.

101. This student would operate strictly on intuition, being unable to give reasons for hunches.

102. This student is a slob, habitually unshaven and unbathed to the obvious embarrassment and discomfort of his associates.

103. This student systematically analyses local situations and experiences, in which he is involved in search of things he can learn that will help him imporve his future performance.

104. This student could be expected to miscalculate the willingness of other students and the faculty to assist him in his work and their interest in it.

107. If confronted with strong opposition to a decision of his which deviated from conventional practices this student would stick to his position, being willing to accept the risk because of the possibility of obtaining an above average profit.

108. This student would talk freely but say nothing sensible. He could be expected to use big words, often erroneously. He would be almost impossible to follow.

109. You would expect assigned reading to be completed, but would not expect this student to undertake extensive reading beyond that assigned in an area.

110. When asked unexpectedly about the characteristics of a procedure with which he should be acquainted, this student could be expected to be evasive as a reflection on his ignorance in this area.

111. When, in a discussion group of 5 students, this student finds that he and another student are in the minority and are subjected to sarcasm by the majority, he could be expected to stick to the point of his argument and not become defensive.

112. This student would be expected to suggest something no one else had thought of in a recitation.

113. During a case discussion, this student would speak up to argue against a course of action a classmate has given, but he would not advance an alternative course of action.

114. This student could be expected to give his undivided attention to even the rather uninspired comments by a classmate.

115. This student could be expected to show patience and willingness to explain a point to a less competent classmate.

116. This student could be expected to present a poorly organized report and to explain its lack of quality on the basis of the short notice given for its preparation.

117. This student could be expected to detect inconsistencies in the position taken by a professor in a critical, significant classroom lecture.

118. This student could be expected to know each of his instructors fully--their grading practices, standards, idiosyncracies, expectations and preferences.

119. You might expect this student to be late in handing in a report because he had not started preparing in time even though the report had been assigned several weeks in advance.

120. This student would talk reasonably well in class although he would sometimes have trouble expressing himself. The class would sometimes find him hard to follow and occasionally his position on an issue would be misunderstood.

121. In a library research paper, you could expect this student to find a few references, but not to pursue the literature sufficiently to find the most pertinent material.

125. Would be a "take-charge" man for his team in a simulation exercise or research project.

126. This student could be expected to try even harder when he found that a problem of supposedly moderate difficulty resisted all initial attempts to resolve it.

127. This student would prefer an easy course with an easy grade to a tough but useful course.

128. This student will willingly "chair" a committee, but only if it is composed of a very few other members on whom he can impose the menial tasks while he completes the more intricate functions as a one-man team.

129. This student would agree to help with some task if asked, but would find some excuse not to help for very long.

130. After a particularly good lecture, you could expect this student to be waiting for you outside your classroom with an invitation to join him and others for coffee and a continuation of your talk.

131. This student would be interested enough to read the Wall Street Journal, and other management literature.

132. This student could be expected to be active in a student management organization.

133. This student might deliberately flunk a math qualifying exam in order to take a course in which he will get good grades.

134. If assigned as a teaching assistant to track down 20 references in marketing, you would expect this student to return in a week with the job completed after doing extensive detective work.

136. This student could be expected to master concepts in individual fields, but not to recognize essential differences and similarities in approaches to problems suggested by each field.

137. This student could be expected to be late for classes, to sprawl in the back of the classroom, and to talk out of turn to other students during class.

138. This student would know how to give and take, to compromise, and to work with others for the benefit of the group.

139. This student waits 'til someone else has suggested a decision before committing himself, but defends his position well.

140. This student would habitually break problems into parts.

141. This student would have sufficient information about a specific procedure that he would be consulted by others in his field.

142. After a presentation by men with higher professional stature, you would expect this student to successfully challenge information and opinions concerning a particular operation within a company.

144. This student might plan and organize a used book exchange to the point that it proves a financial profit to him.

146. This student would be able to describe a problem solving technique using the language of the textbook, but would fail to apply it correctly to data presented in a format he had not seen before.

147. This person might voluntarily teach a night school course in a subject somewhat outside his major field in an effort to broaden his knowledge and teaching experience.

148. On offering criticisms on a second draft of this student's paper, you could expect him to make only a few minor changes, even though many more adjustments might be needed.

149. You would expect this student to find sources of information beyond those suggested initially by the professor for a topic in a graduate seminar.

150. This student could be expected to block on exams, especially those requiring opinions and evaluation of given alternatives.

151. In a class discussion regarding a problematic procedural issue, this student would offer an alternative procedure in such a way as might offend others, particularly those who had proposed the troublesome procedure.

152. This student would be well prepared on an assignment to be discussed in your class even though he had handed in a report in another class the same day.

153. After advancing a future action in a case discussion, this student would give in to the counter arguments of four other students even though their arguments had no superiority other than social pressure.

154. This student is often late for meetings with his classmates although others in similar circumstances don't find it difficult to be on time.

155. Given limited time and resources, this student would seek basic working knowledge in a variety of fields rather than intensive and total mastery of a single specialized facet of managerial activity.

156. This student, as the organizer of a political action group, would have the ability to make stuffing envelopes an enjoyable task. He is not above participating in a program of action at any level, no matter how menial the task.

157. When discussing a case concerning a Negro, this student might try to gain support for his opinion that Negroes are somewhat lazier than whites.

158. Should this student find himself in need of certain information or understanding not provided by the present curriculum, you would expect him to go to the Dean without prompting from others to propose that a special seminar or course be organized.

159. When a professor explains the objectives, content, and methods of several courses which this student is considering, this student would not be able to decide on registering even after studying the syllabi and talking with several students who had taken the courses.

160. During his last year of graduate work this student would select a list of companies he regards as sound, send them a description of his interests and qualifications, and propose that each company hire him to introduce or enlarge services or procedures that are his specialty.

161. In a typical curriculum of several separate but related courses, this student could be expected to choose his topics and select his reference sources for a current paper in a way calculated to assist him in other course assignments.

162. When faced with a choice of elective courses, this student always picks one closely related in subject area to courses in which he previously has received high grades.

164. This student could be expected to help slower students voluntarily. He would not, however, be motivated by self-aggrandizement.

165. Shortly after arriving on campus this student could be expected to be familiar with the rules, local customs, mores and social structure.

166. Would attempt to dominate others by imparting to them a sense of subordination.

167. Judging from his withdrawn behavior in class, you would expect this student might not be able to hold the attention of a small group even in a discussion at coffee.

168. In group assignments, this student volunteers to do that part of the job which he can do best, instead of seeking the task which will enable him to learn the most.

172. If in a class of 40, this student presents a different point of view and is booed, hissed, or laughed at, he would be calm in defending his position.

173. This student would know the first names of all the people with whom he works.

174. In class discussion, this student would be able to make an effective presentation when told to assume circumstances of a case are radically different from those of actual cases.

175. This student would be concerned mainly with short-range profit or immediate benefits to a company or department.

177. You would expect this student to be friendly and easily approached by freshmen seeking information on graduate work in business school.

178. Before the end of the spring semester, this student could be expected to find out about his academic program for the next year in order that he might take any steps during the summer necessary to be ready for the courses.

179. This student could be expected to be really interested in engineering, but would think he could make more money by going to management school.

180. When asked to present a paper in a class or seminar on short notice, this student could be expected to overlook several routine details such as having a slide projector available if needed, or in getting tabular material to a secretary in time for duplication.

181. This student would be sensitive to others' needs to participate and would not dominate a discussion.

182. This student could be expected to recognize and allow for the fact that many consumers feel an essential objective of business is to provide a real service.

183. This student could be expected to apologize before asking a professor to repeat a statement he had not heard correctly.

184. This student could be expected to take advantage of every opportunity to be productively engaged in study or other self-improvement even when riding on a subway or waiting in line in a cafeteria.

185. If a well known authority on tax law had been invited to speak to your class, you would expect this student to arrive early for the lecture with a few good questions already in mind for the discussion period.

186. This student would almost never recite in class and when called upon, would be almost inarticulate. Ideas would have to be dragged from him with very pointed questions.

187. This student would hoard reserve books in the library.

188. This student would keep informed about current events and would see their relevance to class discussions.

189. This student could be expected to consider timing and coordination of events in solving a specified problem in marketing.

190. This student could be expected to go to the placement office to inquire about job opportunities before most students, in order to avoid the last minute rush for appointments.

191. Without any specific suggestion by anyone, this student could be expected to make an appointment to discuss a question he has about a point a professor made in a lecture.

192. If he felt the situation warranted it, this student might break minor rules. For example, he would hand in a handwritten report when a typed report was required.

193. This student would inconvenience professors and staff by taking their time for problems which, with a little effort, he could resolve by himself.

194. This student could be expected to find his own thesis or term project subject, without the help of a faculty member, and proceed in the initial stages of the study without specific guidance from a faculty member.

195. This student would care enough about a new person to show him where to get supplies or to sit down and talk to him understandingly about specific problems.

196. This student might begin discussing a problem in the middle so that the interested parties have a tough time understanding it. He doesn't fully explain what he is talking about.

197. In a business game, this student could be expected to lay out tasks for team members, to make sure different contingencies were foreseen and to plan simulated company operations several moves ahead.

201. This student would be able to isolate a set of issues when confronted with a case write-up, but would fail to define reasonable criteria for comparing the merits of alternative proposals.

202. If unable to solve a problem in probability theory by application of formulas discussed in class, you would expect this student to give up after half an hour, even though he could obviously solve the problem by the inelegant and tedious method of enumeration.

203. This student's educational pursuits will probably end the day he graduates.

204. This student could be expected to seek out another student without transportation to offer to take him home although it was several miles out of the way.

206. When asked to fill in temporarily on a business game team, this student would become intrigued and would enliven the sessions with his interest.

208. When considering a new floor layout in a production problem, this student could be expected to overlook an important detail like a means for removing the finished product from the work area.

210. On receiving a low grade on a test, this student asks the professor to explain the formulation of a better solution and to point out the weaknesses in his approach. He fails, however, to apply this explanation to a new situation to test his understanding.

212. When called upon this student would restate the facts of a case, but wouldn't decide on a course of action. Instead, he would say that more facts are needed to make a decision.

213. In organizing students to carry out a class project, this student is unable to assign priorities among subtasks which reflect their relative importance to the success of the endeavor.

214. This student's work sparkles and he displays an active interest in each situation in which he participates.

215. You would not expect this student to volunteer in class discussion, though he might be well-prepared when called on.

216. This student could be expected to be involved in several graduate student extracurricular activities, to play an active part in graduate social and athletic affairs, while pursuing his academic work energetically and auditing or taking extra courses for credit.

217. In a seminar involving a computer solution of a business game which is unexpected and unreasonable by conventional standards, this student would undertake a detailed, step-by-step review of the stages of the program.

218. This student begins a research project with an "I want to find out...." attitude as opposed to an "I want to prove thus and so" attitude.

219. This student could be expected to consider schools of business as well as other professional schools when applying for graduate study.

221. This student would rely on faculty to make program decisions for him.

222. You would not expect this student to seek a challenging problem on his own.

223. This student could be expected to stick with pedestrian solutions which represent only old and well-tried ways of doing things.

224. This student would probably look four or more years ahead.

225. Classmates would be likely to respect his views in class discussions.

227. This student would be unable to tolerate ambiguous situations where the outcome of any course of action is uncertain.

228. This student would be able to determine logical reasons both pro and con for a certain action regardless of his own personal opinion.

229. This student would not be very serious about management as a career, but would see it as a means to an end for him.

230. As chairman of a group activity where individual performance is judged on the basis of total group performance, this student would assume responsibility for failures, even though they can be traced to the ineptness of another member of the group.

231. Would expect this student to take account of implication of actions for other parts of an organization and for others external to an organization.

232. This student would formulate reasoned recommendations for action in a variety of situations. However, he would insist on completing most tasks himself and would be unwilling to rely on the competences of others.

233. You would expect this student to resist suggestions for changes while failing to explore the validity of his position.

234. After the instructor has begun a case discussion with a question, the student could be expected to respond by suggesting an entirely different, but defensible question as a better way to begin analyzing the case.

235. This student could be expected to be constantly on the look out for indications of his standing in the eyes of the faculty.

236. This student might propose a research idea which requires a substantial amount of correspondence to many companies and which runs over from one term to the next. He would keep up his interest and follow up to get a decent percent of return.

238. This student's written work would be so brief it would fail to convince. Long jumps from one idea to another would make his reasoning hard to follow.

239. This student could be expected to be in Business school only because of his parents' insistence.

240. This student would be able not only to evaluate and select from relevant alternatives for solving a problem, but also would structure a problem in a way which would lead to the generation and testing of new alternatives beyond those suggested by particular analytical tools.

241. This student can be expected to display a healthy skepticism about existing procedures and traditions, and to make constructive suggestions for improving operating characteristics.

242. This student speaks up sharply in a higher pitched voice than usual when discussion hits an issue about which he obviously has special knowledge.

243. This student would be expected to raise the question of responsibility of business to provide jobs for employees displaced by technological developments.

244. When faced with situations where organizational values are in conflict with his own, this student would withdraw from participation rather than attempt working from within the group toward modification of the group's objectives.

245. This student would write his papers in such a way that each assignment appears to be a challenge he has eagerly accepted. It is a pleasure to read his reports and one infers that he has gotten a kick out of writing them.

247. If the instructor was delayed for a case discussion, this student would be likely to get a discussion started.

248. You could count on this student to organize and keep his discussion group going.

250. Occasionally this student would be sarcastic to those who ask him for help.

251. In an area in which he is having difficulty, this student could be expected to prepare an outline of concepts and to work out problems as far as he could go in an effort to pin down specific points of his weakness, and to discuss this effort with the professor, asking questions until he is confident that he understands enough to overcome his difficulty.

252. This student would be unable to articulate any reasoned or informed viewpoints on subjects other than those required in his business curriculum.

253. In outlining the issues involved in a case problem pertaining to introduction of a new manufacturing process, this student would assume that manufacturing engineering and engineering economy variables are the only relevant factors.

254. This student could be expected to apply for admission to business schools only after being refused admission to other schools.

255. This student would be unable to manipulate and obtain a quantitative solution using computational formulas which are specified as relevant to a given problem.

256. This student would enjoy studying and observing the problems arising in connection with a major change in production methods, but he would not want to be involved actively in having to bring about the change.

257. This student could be expected to select a term paper involving an ill-defined and unsolved problem in an area with which he was least familiar in an attempt to learn more.

258. This student would be able to discuss issues of a case well, but would find it hard to answer questions based upon changed conditions in the case.

259. As program chairman, this student could be expected to manage arrangements for enlisting a main speaker for a special class lecture reasonably well, but he would probably omit one or two details which would have to be handled by improvisation.

262. This student might express himself orally in an adequate manner, but would lack clarity in the organization and meaning of his written work.

263. This student's oral and written expressions both are awkward and unclear.

Instructions for Judges

You have been asked to serve as a judge in a research effort being conducted at E.T.S. at the request of the Policy Committee of the Admission Test for Graduate Study in Business. The objective of this work is to develop a set of rating scales to supplement academic grades as criteria of student performance. To overcome the "halo effect" which has plagued research in this area and to make the scales as explicit as possible, each scale is being anchored to observable behaviors. This requires that we obtain behavioral examples which competent judges will agree do, in fact, illustrate the qualities in question and also agree on how much of the quality is illustrated. Accordingly, would you please take the following steps.

1. Read each of the general statements defining high, medium, and low levels of each of the fifteen qualities selected. Give particular attention to the intended distinctions among the scales. (It is recognized, incidentally, that everyone may not agree that all of the qualities are desirable. At this stage of the research, we are more concerned with full description than with evaluation.)

2. Read each of the examples which are reproduced on the 3 x 5 cards. These are intended to illustrate some level of a quality. Since the particular examples you have were randomly selected from a larger pool, you may not have an example of every quality in your sample. You should, however, assign every example to a particular quality. Write in the letters representing the one quality you feel is best represented by the example. You may find it helpful first to sort the examples, and then to assign scale values to all the items within a given quality.

3. Record the scale value you believe should be assigned to the example to indicate the amount of the quality it represents. Refer to the anchor statements provided for each scale. If you believe a particular example embodies only a small amount of the quality concerned, it should be given a low rating, perhaps .00 or .50. Conversely, if you believe it illustrates a high degree of the quality it should be placed at the high end of the scale. Try to judge each item on the degree of a quality illustrated, without regard to whether you feel the particular behavior in the example is desirable or not.

Suggested revisions designed to clarify what is illustrated by a particular example are welcomed. However, please make your judgments concerning the quality illustrated and the scale value of the example in terms of the original form of the example. Statistics for judgments of the original item can then be compiled. After completing your judgment of the original item, you may record suggested revisions and your judgments associated with the revised example.

Please keep in mind that in order for the judgments to be useful they must be carefully made. Hastily made judgments may only confound the results.

Thank you very much. We greatly appreciate your help.

RATING SCALES FOR GRADUATE STUDENTS
IN SCHOOLS OF BUSINESS AND PUBLIC ADMINISTRATION

Prepared under the Direction of the Policy Committee
of the
Admission Test for Graduate Study in Business

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Educational Testing Service, Princeton, New Jersey

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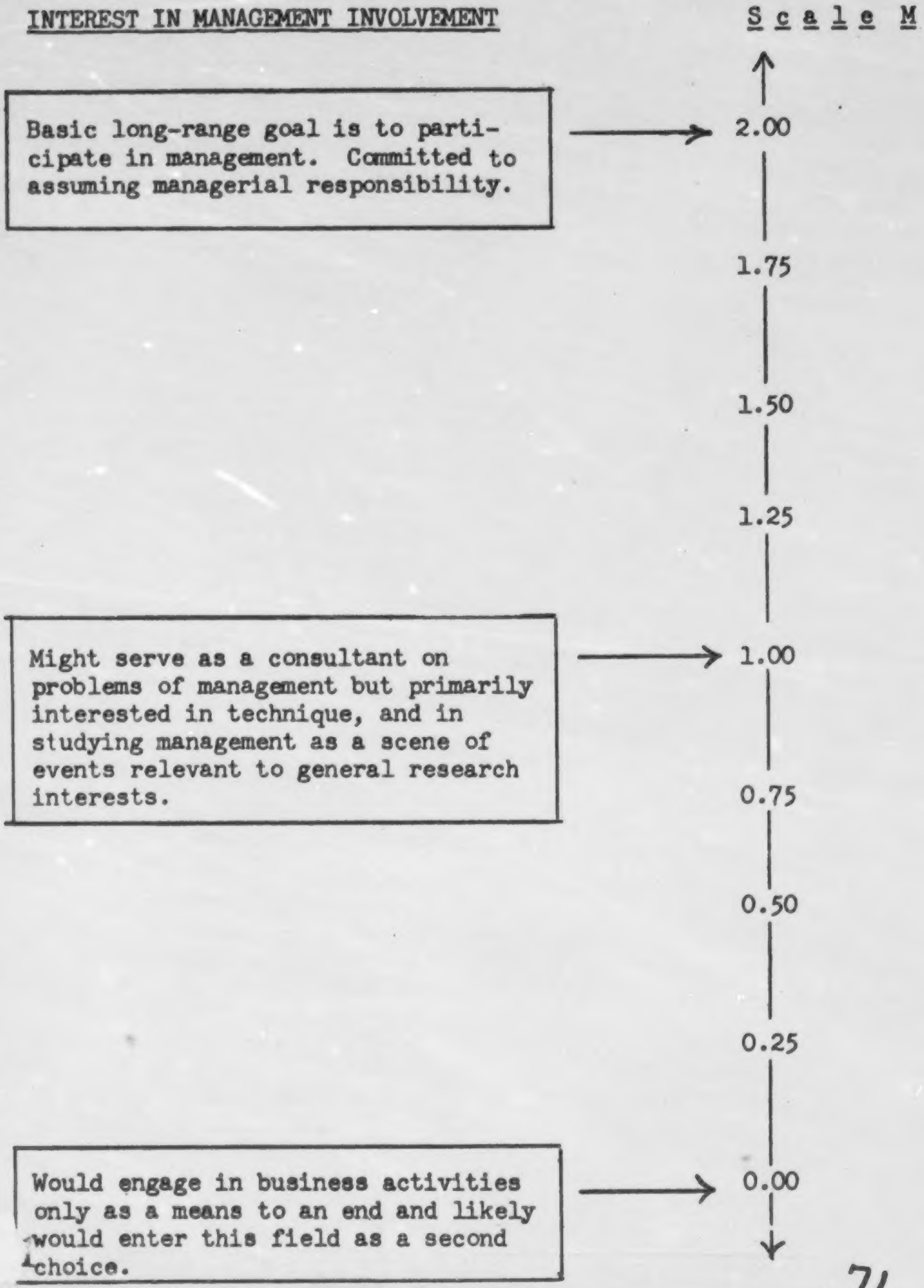
INTEREST IN MANAGEMENT INVOLVEMENT



Basic long-range goal is to participate in management. Committed to assuming managerial responsibility.

Might serve as a consultant on problems of management but primarily interested in technique, and in studying management as a scene of events relevant to general research interests.

Would engage in business activities only as a means to an end and likely would enter this field as a second choice.

MANAGERIAL SKILL

Scale MS

Scale MS	
2.00	Able to work through others where contribution of other group or organization members is necessary for implementation. Willing to accept measures of personal performance which depend on how much he is successful in getting other people to contribute to programs of action. Accepts responsibility for performance of others. Able in facilitating smooth functioning of groups and organizations.
1.75	
1.50	
1.25	
1.00	Moderately successful in getting work done through others. May be some reluctance to delegate responsibility.
0.75	
0.50	
0.25	
0.00	Probably is unable to delegate responsibility and effectively coordinate work of others.

Note: Planning for Implementation is covered by the scale with that title.

SELF-DEVELOPMENT

Scale SD

Student is particularly alert to opportunities to broaden his competence and insight beyond prescribed assignments. Has sense of direction and purpose, a well thought out and realistic plan for realizing his educational and career goals and for testing and modifying them. Willing to postpone gratifications. → 2.00

1.75 ← This student could be expected to select a term paper involving an ill-defined and unsolved problem in an area with which he was least familiar in an attempt to learn more.

← This student might voluntarily teach a night school course in a subject somewhat outside his major field in an effort to broaden his knowledge and teaching experience.

1.50

1.25

Student moderately alert to opportunities for learning. May not have fully thought out career development plan. Occasionally may take special steps to strengthen his professional preparation. → 1.00 ← This student would read the Wall Street Journal and other management literature beyond what was required by class assignments.

0.75 ← This student would take a summer job as a management trainee rather than a higher paying technical job, if advised to do so by a professor.

0.50

← In group assignments, this student volunteers to do that part of the job which he can do best instead of seeking the task which will enable him to learn the most.

0.25

← This student might deliberately flunk a math qualifying exam in order to take a course in which he will get good grades.

Student only undertakes prescribed assignments and courses within narrowly defined field of study. Chooses projects and courses in areas of previously demonstrated strength and competence. May do nothing to develop a career plan or to implement whatever plans he has. → 0.00 ← This student's educational pursuits will probably end the day he graduates.

PERSPECTIVE AND BREADTH OF KNOWLEDGE

Scale PB

2.00 ← Demonstrates capacity for judging soundly and dealing broadly with facts and the implications of actions, especially in their practical relations to political, social, and economic conditions. Has a broad interest and background of information and is aware of the social implication of business activities.

Note: Also see the Technical Knowledge scale.

← This student would show awareness of long-range implications of current wage and salary decisions, in labor relations, community relations, etc.

1.75

← This student would keep informed about current events and would see their relevance to class discussion.

1.50

1.25

← This student would admit the need to consider the social responsibility on the part of a company when this is pointed out by others during a discussion of retirement policy.

1.00 ← Is fairly knowledgeable outside the confines of business but relates his outside knowledge to his business decisions and actions only if stimulated to do so.

0.75

0.50

← This student would be able to integrate production, marketing, and finance viewpoints in a case problem involving a company diversification decision, but would be unable to incorporate relevant government policy, social factors, and exogenous technological trends.

0.25

← In outlining the issues involved in a case pertaining to introduction of a new manufacturing process, this student would assume that manufacturing engineering and engineering economy are the only relevant factors.

0.00 ← Confines his interest to the organization of technical knowledge about business. Is insensitive to possible broader social consequences of business actions.

TECHNICAL KNOWLEDGE

Scale TK

Thoroughly familiar with the necessary technical information as well as basic principles which generate specific information relevant to particular application within his field.	2.00	
	1.75	This student would have sufficient information about a specific procedure that he would be consulted by other students as an expert in the field.
	1.50	
	1.25	
Possesses essential technical information but may be deficient in knowledge of basic principles required for technical problems without prescribed solutions.	1.00	
		This student would be able to manipulate correctly a mathematical procedure, but would not be able to state the major assumptions on which the method is based.
	0.75	
	0.50	
		This student would be unable to manipulate and obtain a quantitative solution using computational formulas which are specified as relevant to a given problem.
	0.25	
Very spotty technical knowledge or knowledge restricted to only the most common technical information.	0.00	

Note: Also see the Perspective Scale and the Problem Analysis Ability Scale.

CRITICAL AWARENESS

Scale CA

Actions indicate keen alertness to environmental cues and events, especially the reactions of people he works with, which are relevant to successful fulfillment of his obligations. Includes accurate self-perception and unbiased perception of persons with backgrounds different from his. → 2.00

2.00 ← Because of his knowledge of the needs and interests of the group, this student would sense immediately that his contribution to a discussion was being negatively received and would make an appropriate modification in his approach.

1.75 ← This student could be expected to know each of his instructors fully--their grading practices, standards, idiosyncracies, expectations and preferences.

1.50

1.25

Only moderate awareness of what is taking place in environment. Is sufficiently sensitive to avoid major errors but does not take his perceptions into account in a discerning way. May share popular stereotypes to some extent. → 1.00

1.00

← Although the student might be sensitive to environmental forces affecting the way his performance is perceived by others, he would fail to assign priorities to different environmental forces in order to determine adaptive behavior.

0.75

0.50

← This student could be expected to miscalculate the willingness of other students and the faculty to assist him in his work and their interest in it.

0.25

Very little awareness. Misses important reactions to his behavior. May be highly prejudiced (but not necessarily so). → 0.00

0.00 ← In preparing an oral report criticizing an economic theory, this student would fail to take into account the probable hostility of his audience.

PROBLEM ANALYSIS ABILITY

Scale PA

Skilled in the orderly, analytical exploration of problems. Competent in identifying and abstracting problems, in ascertaining what information is relevant to them, in searching for information and in formulating problem solutions. Note: Willingness to make decisions in regard to problems is covered by the Resolution and Decisiveness Scale; and planning for implementation is covered by the scale with that title.	2.00	This student would be able not only to evaluate and select from relevant alternatives for solving a problem, but also would structure a problem in a way which would lead to the generation and testing of new alternatives beyond those suggested by particular analytical tools.
	1.75	
		This student would habitually break problems into parts and could be expected to suggest several different approaches.
	1.50	
	1.25	
Moderately skillful in analyzing problems and formulating solutions. May be generally competent, but weak in one or more important respects. May not recognize limitations of specific techniques.	1.00	This student would be able to isolate a set of issues when confronted with a case write-up, but would fail to define reasonable criteria for comparing the merits of alternative proposals.
	0.75	
	0.50	This student would tend sometimes to rely on intuition and in such cases might be unable to give reasons for his hunches.
	0.25	
Generally ineffective in problem analysis. Usually fails to see significant elements, or proceeds in confused, disorderly way.	0.00	This student would be unable to extract a set of possible problems which might be relevant from an ill-structured, although comprehensive description of a management situation.

RESOLUTION AND DECISIVENESS

Scale RD

Shows courage, self-confidence, and constancy in the face of difficulty. Is willing to make decisions and assume responsibility for possible risk associated with uncertain outcomes. Maintains equanimity under stress. Willing to stick to an unpopular decision in the absence of better alternatives. Resilient to setbacks. →	2.00	← If confronted with strong opposition to a decision of his which deviated from conventional practices, this student would stick to his position.
	1.75	← If, in a discussion group of 7 or 8 students, this student found himself on the minority side and subject to the sarcasm of the majority, you could expect him to stick to the point of his argument without becoming defensive.
	1.50	
	1.25	
Sometimes displays reluctance and uneasiness with decisions and commitments where there is risk and uncertainty. Usually calm, controlled, and self-confident but may become uncertain and confused under stress. →	1.00	
		← This student waits until someone else has suggested a decision before committing himself, but he defends his position well.
	0.75	← In class discussion, this student expresses his opinions freely, but is easily persuaded to change his views when others are critical of them.
	0.50	← When called upon, this student would restate the facts of a case, but would not decide on a course of action. Instead, he would say that more facts are needed to make a decision.
	0.25	
		← In stressful circumstances, this student would be unable to decide on even routine and trivial things such as what to order for lunch.
Procrastinates in the face of uncertainty until forced to decide. Fearful of failure and rejection and frequently disabled by anxiety. Capricious and unpredictable. →	0.00	

Note: Also see Problem Analysis Ability, which is to be distinguished from the present scale.

PLANNING FOR IMPLEMENTATION

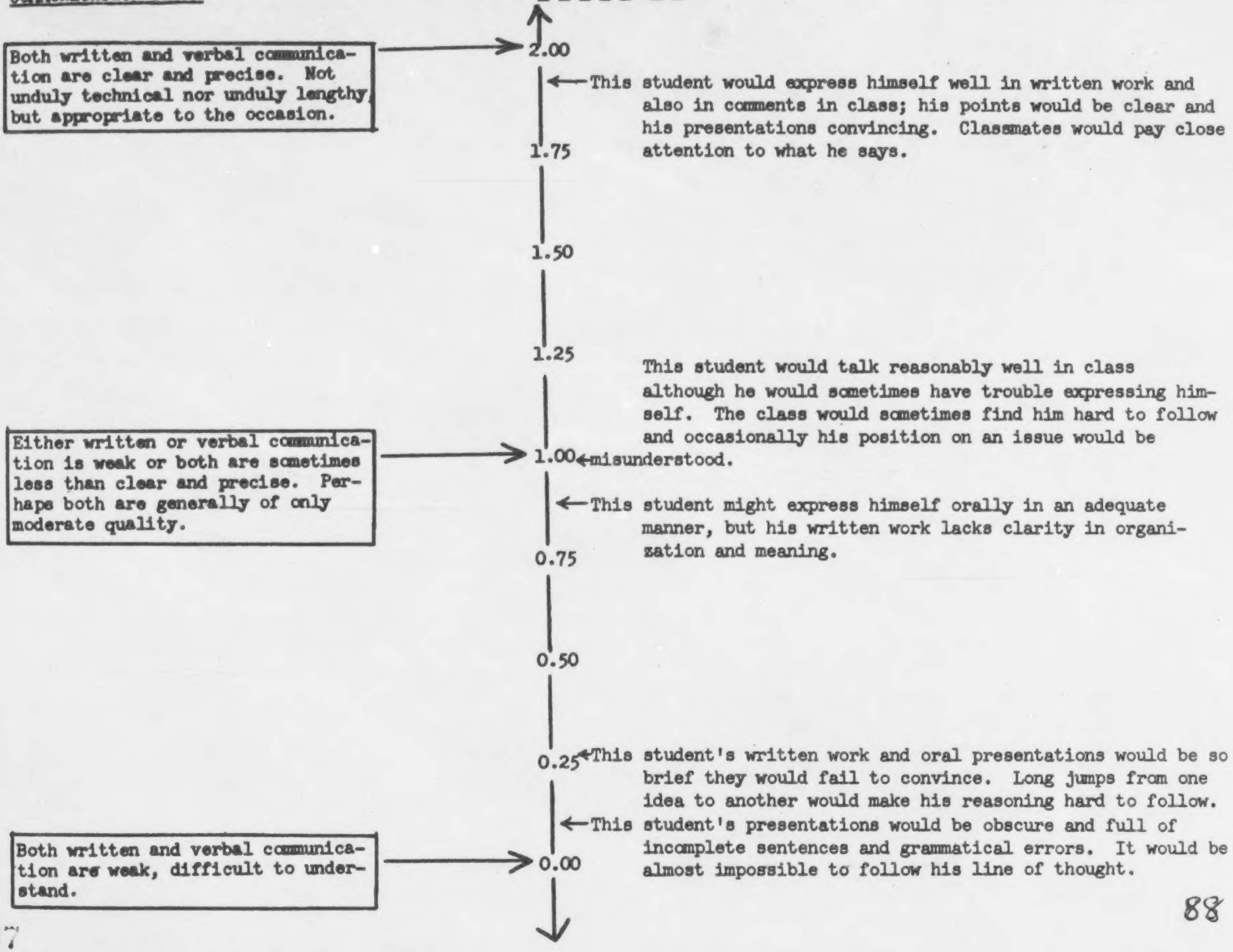
Scale P1

Appropriately assigns priorities to maximise use of resources, materials, and personnel. Anticipates changes in the environment. Schedules concurrent and sequential activities as necessary to meet deadlines. Planning concerns both personal tasks and group or organizational work he is involved in.	2.00	
	1.75	This student would be well prepared on an assignment to be discussed in your class even though he had handed in a report in another class the same day.
		This student seldom misses deadlines.
	1.50	
	1.25	
Plans for large segments of a task but limited in ability to anticipate and provide for less obvious requirements.	1.00	As program chairman, this student could be expected to manage arrangements for enlisting a main speaker for a special class lecture reasonably well, but he would probably omit one or two details which would have to be handled by improvisation.
	0.75	When asked to present a paper in a class or seminar, this student could be expected to overlook several routine details such as having a slide projector available if needed, or in getting tabular material to a secretary in time for duplication.
	0.50	
	0.25	
		You might expect this student to be late in handing in a report because he had not started preparing in time even though the report had been assigned several weeks in advance.
No sense of priorities. Moves from one crisis to another with no regard to an integrated plan. Unable to anticipate future needs.	0.00	

Note: Also see Problem Analysis Ability

COMMUNICATION SKILL

Scale CS



2.00 — Both written and verbal communication are clear and precise. Not unduly technical nor unduly lengthy, but appropriate to the occasion.

← This student would express himself well in written work and also in comments in class; his points would be clear and his presentations convincing. Classmates would pay close attention to what he says.

1.00 — Either written or verbal communication is weak or both are sometimes less than clear and precise. Perhaps both are generally of only moderate quality.

1.00 ← This student would talk reasonably well in class although he would sometimes have trouble expressing himself. The class would sometimes find him hard to follow and occasionally his position on an issue would be misunderstood.

← This student might express himself orally in an adequate manner, but his written work lacks clarity in organization and meaning.

0.25 ← This student's written work and oral presentations would be so brief they would fail to convince. Long jumps from one idea to another would make his reasoning hard to follow.

← This student's presentations would be obscure and full of incomplete sentences and grammatical errors. It would be almost impossible to follow his line of thought.

0.00 — Both written and verbal communication are weak, difficult to understand.

ENTHUSIASM

Scale E

2.00 — Has zest and sparkle; enjoys his study, work, and other interests; responsive and vibrant. Reacts spontaneously to people and problems. May be vigorous and energetic but not necessarily so. (See Persistence and Drive Scale.)

This student would write his papers in such a way that each assignment appears to be a challenge he has eagerly accepted. It is a pleasure to read his reports and one infers that he has gotten a kick out of writing them.

1.75

When asked to fill in temporarily on a business game team, this student would become intrigued and would enliven the sessions with his interests.

1.50

1.25

1.00 — Responds well to subjects of special interest to him but not to other subjects. Conversation sometimes is moderately lively but not always.

On some cases, this student could not be expected to volunteer discussion, on others he could. This seems to be due to a difference in interest rather than in preparation.

0.75

0.50 — You could expect this student to be eager to leave class at the end of the hour, even if the professor was not quite finished with his lecture.

0.25 — This student speaks in a monotone in class and generally gives the impression of not being interested in the subject.

0.00 — Unresponsive and impassive. Seldom shows any interests. Does work as a means to an end with little true pleasure in the process. Dull to talk with.

0.00 — This student would be unresponsive or bored, even during a lively simulation exercise in which several teams went bankrupt and gave him an opportunity to corner the market.

INITIATIVE

Scale I

Voluntarily takes steps to accomplish tasks or solve problems without impetus from other persons. Able to anticipate imminent problems correctly and to work toward their solution as much as possible without reliance on others, working on the task without constant supervision. Sometimes described as being "inner directed." → 2.00

← This student could be expected to find his own thesis or term project subject, without the help of a faculty member, and to proceed in the initial stages of the study without specific guidance from a faculty member.

← In business games or group learning efforts, this student could be expected to evaluate the problem independently and to take the lead in suggesting methods of solution.

1.75

← Without any specific suggestion by anyone, this student could be expected to make an appointment to discuss a question he had about a point a professor made in a lecture.

1.50

1.25

← You would expect this student to find sources of information beyond those suggested initially by the professor, but he would require some general direction beforehand.

Moderately self-directed; occasionally requires general direction and encouragement to begin tasks. → 1.00

0.75

← You would not expect this student to volunteer in class discussions, though he might be well-prepared when called on.

0.50

← When required to prepare an assignment on a topic of his own choosing, this student would require an instructor's help in finding a topic and later on would have to be checked on to see that the job got done.

0.25

← In conducting a research project, this student could be expected to depend upon someone else for the suggestion of the topic, definition of the problem, and direction.

Unable to anticipate problems. Requires frequent supervision and reassurance. Finds it very difficult to work on his own. → 0.00

PERSISTENCE AND DRIVE

Scale P

Capable of prolonged attention to a task whether self-initiated or assigned, until it is completed, without requiring constant supervision. Works energetically, without delay and procrastination. May undertake a number of different activities simultaneously in pursuit of a single goal. → 2.00

← This student could be expected to try even harder when he found that a problem of supposedly moderate difficulty resisted all initial attempts to resolve it.

1.75

← This student might propose a research idea which requires a substantial amount of correspondence to many companies and which runs over from one term to the next. He would keep up his interest and follow up to get a decent per cent of return.

1.50

← You would expect this student to stick with assignments until completed even when they are of little interest to him.

1.25

← This student could be expected to initiate and sustain a proposal for studying a business opportunity providing there were no competing demands on his time in other courses during the period.

Capable of prolonged attention to a few tasks which are of special personal interest. Stays with a task until it is completed provided there are no conflicting demands on his time. → 1.00

0.75

← You could expect this student to finish work that interests him, but to procrastinate on other tasks.

0.50

← In a library research paper, you could expect this student to find a few references, but not to pursue the literature sufficiently to find the most pertinent material.

0.25

← If unable to solve a problem in probability theory by application of formulas discussed in class, you would expect this student to give up after a few minutes even though he knew he could solve the problem by using a tedious method of enumeration.

Stays with any task for only a limited time. Unable to pursue several tasks concurrently to completion. → 0.00

FLEXIBILITY

Scale F

Receptive to new ideas, willing to change and to experiment. Innovative and adaptable to requirement of local conditions. → 2.00

When a job opportunity came along in an area which this student had not considered, he would quickly gather appropriate information, present himself well, and would consider accepting an offer if he were to receive one.

1.75

In class discussion, this student would be able to make an effective presentation when told to assume circumstances of a case are radically different from those of actual cases.

1.50

1.25 ← Ordinarily this student seems able to change his mind when he is shown to be wrong.

This student is able to adapt adequately to changes, but seems most comfortable under predictable circumstances.

Decidedly prefers and is most comfortable with conventional procedures but recognizes when they are inadequate. Can be forced to consider alternatives but with some effort. → 1.00

0.75

When someone in the class suggests a novel idea, you would expect that it would take this student some time to get used to the idea before he would consider its acceptance.

0.50

You would expect this student to resist suggestions for changes while failing to explore the validity of his position.

0.25

This student could be expected to be unreceptive to new ideas and proposals even in situations where previous methods proved inadequate.

Rigid, pedestrian and unwilling to deviate from conventional but inadequate procedures. → 0.00

CONSIDERATION

Scale C

2.00 — Mindful and understanding of needs, feelings, and rights of others, and makes allowances for them. Accepts responsibility for well-being of his associates and others dependent on him. Is helpful and generous in contributing his time and energies to group efforts.

← This student could be expected to seek out another student without transportation to offer to take him home although it was several miles out of his way.

1.75 ← This student could be expected to volunteer to help slower students unselfishly.

1.50

← This student would be apologetic about asking a professor to repeat a statement he had not understood.

1.25

← This student would be sensitive to others' needs to participate, but would occasionally dominate a discussion.

1.00 — Considerate and friendly much of the time but not invariably. Can be relied on to accept the responsibilities and duties normally expected of him by others.

0.75

← This student occasionally gets so involved in his own ideas he has difficulty letting others discuss theirs.

0.50

← Occasionally this student would be sarcastic to those who ask him for help.

0.25

← This student would hoard reserve books in the library.

0.00 — Intrusive and oblivious to needs and feelings of others. Reduces the effectiveness of an organization by demanding excessive time and attention for himself. His personal convenience and well-being are always of primary importance. Nonconformity may be exhibited at the expense of others.

-C17-

Table 1

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Self-Development

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigning Modal Qual.	Total No. Judgments
28	20																					3	7	10	1.84	100%	20
52	12							1				1									1	2	5	4	1.75	86%	14
257	14			1		1						2										6	2	6	1.75	74%	19
184	9							1			1	2	8								1	2	2	4	1.75	43%	21
224	13							3													1	2	9	1	1.69	81%	16
103	9		2		2							1	1								2	3	1	3	1.64	60%	15
178	8							10					1									4	2	2	1.62	42%	19
155	9	6	5	1	1			4		1										1		3	4	1	1.60	33%	27
147	18					1						3							1	1	5	3	1	7	1.57	82%	22
219	7	9														1				3	2		1		1.04	44%	16
109	7										1	8	2			1	3		1	2					.50	39%	18
168	12													1		3	5	4							.27	92%	13
221	5						4					5				1	3	1							.25	36%	14
162	15						3				1			2		7	5	3							.18	71%	21
133	10						3	2								6	2	2							.15	67%	15
203	19											3				14	3	1	1						.10	86%	22
37	9	1														6	3								.08	90%	10
127	15						2				1	1				12	3								.05	79%	19
63	8	7									1		1			8									.00	47%	17
161	6			1		1		8									1	3				1	1		.83	38%	16

Table 2

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Interest in Management Involvement

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigning Modal Qual.	Total No. Judgments
10	5	10																				3	3	4	1.78	67%	15
132	1	12																		2	1	5	2	2	1.52	92%	13
95	5	17																1	1	6	3	1	3	2	1.28	77%	22
131	4	9	2															1		3	1	3	1		1.22	60%	15
256		5				1	4	2		1			1							5					1.00	36%	14
219	7	9															1	2	1	5					.78	56%	16
179	4	13														6	5	1		1					.21	76%	17
229	2	16														10	4	1		1					.16	89%	18
254	2	14														10	3	1							.09	88%	16
239	5	10									1					7	3								.08	62%	16
63	8	7									1		1			6	1								.00	47%	17

Table 3

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Perspective and Breadth of Knowledge

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
21			13																			3	6	4	1.77	100%	13
25			13		2																1	3	6	3	1.71	87%	15
243			13		3										5						3	1	5	4	1.69	62%	21
17	1	1	10		1							2		1								4	5	1	1.68	63%	16
182			10	1	4										3						3	2	4	1	1.58	56%	18
188	2		15		1				1												2	9	3	1	1.55	79%	19
47			15		2									1	1		1		2	8	2	1	1		1.03	79%	19
54			11		8											3	5	1	1	1					.32	58%	19
71			15		2											6	3	4	1	1					.30	88%	17
252	2		15		1											6	6	3							.20	83%	18
20			10	1	6											6	1	2	1						.20	59%	17
175	3	2	11		1		1	7								4	5	2							.20	44%	25
253		1	10	1	1	5										5	4	1							.15	56%	18

Table 4

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Technical Knowledge

Item No.	Distribution of Reallocations SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	Levels Assigned .00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
14	1		1	6		1	2															2	1	3	1.79	54%	11
141				12																	1	3	3	5	1.75	100%	12
117				6	1	11																1	2	3	1.75	33%	18
68			5	7	1	6															1	2	2	2	1.66	37%	19
136			2	8		10												1	1	5	1				.94	40%	20
1				14		1												2	4	7		1			.89	93%	15
146				6		10		1						3			1	2	1	2					.70	50%	20
255				12		3										3	6	2		1					.29	80%	15
8	1		2	9		1	1		4							3	5		1						.22	50%	18
110	1			8			8	1	1					1		7	1								.03	40%	20

Table 5

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Critical Awareness

Item No.	Distribution of Reallocations: SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	Levels Assigned: .00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
165	1		2		10						1			1								2	4	4	1.80	67%	15
77				1	9	3	1		1	2		1		1	5							2	3	4	1.78	38%	24
118	3				15	1		1												1	1	1	6	6	1.75	75%	20
228					6	9								3								2	2	2	1.75	33%	18
18					6			2		6				2	2						1		3	2	1.62	33%	18
231			1		11										2					1		3	2	5	1.73	78%	14
6					15		1								1			1		1		3	3	7	1.68	88%	17
235	2				4		2					2			1			1		1			2		1.25	36%	11
83					7			3		3					3	1		1	1				3	1	.89	44%	16
98			1		17	2		1									2	3	2	8	2				.82	81%	21
157			1		15		3							2		1	5	4	1	4					.53	71%	21
54			11		8											2	2	2		1			1		.53	42%	19
104					13							2			1	4	2	3	3			1			.44	81%	16
4					10										7	3	5	1				1			.32	59%	17

Table 6

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Problem Analysis Ability

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
240			1			22																	2	20	1.98	96%	23
53			1		1	8															1		1	6	1.87	80%	10
117				6	1	11																2	2	7	1.85	61%	18
228					6	9								3							2		1	6	1.80	50%	18
112			1	1	1	6						1		2								1	3	2	1.79	50%	12
217				1		8	1					1	4	2							1	1	4	2	1.75	47%	17
16			1	2		15										7	7		1						1.67	83%	18
234			1		2	8	3					4		1	4							3	5		1.65	35%	23
218	3	2	1		2	5								4	1					1		1	2	1	1.60	28%	18
36	1					11	1													1	4	2	2	2	1.59	85%	13
96			1	1		11						1						1		2	1	2	1	4	1.50	79%	14
22		2				14	5										1	1		1	3	2	3	3	1.48	67%	21
140				1		16								1				1	1	1		7	5	1	1.475	89%	18
201					1	19		1					1			1	1	1	2	11	1	2			0.91	86%	22
91				1		14		3	1								1	1	5	5		2			0.90	74%	19
113				1	2	3	3			1		1		1	1				3						0.75	23%	13
136			2	8		10											2	2	2	3	1				0.72	50%	20
43	1	1	3			7	1					1		2		1	1	1	4						0.71	44%	16
116				6		10		1						3		1	1	2	2	3	1				0.70	50%	20
41				2	3	7			1	2	1	2					2	3	1	1					0.54	39%	18
75					3	6		1					1				3	1	1	1					0.50	55%	11
210	2			2		6						3	1	6		2	2		1		1				0.42	30%	20
208				2		11		6								1	6	2	1	1					0.39	58%	19
82		1			4	6	1							5		1	4	1							0.25	35%	17
101				3	1	8										3	5								0.16	67%	12
35				4	1	7								1		4	2	1							0.14	54%	13

Table 7

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Resolution and Decisiveness

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
172					2		20							2								2	6	12	1.88	83%	24
107							18															2	5	11	1.87	100%	18
142		1	1	6		1	9			1		1										2	4	3	1.78	45%	20
111					1		13					1										2	8	3	1.77	87%	15
2						4	17													1	2	5	6	3	1.62	81%	21
139							10		1			3					1	2	1	3	3				.87	71%	14
56							16							1			1	4	7	3	1				.73	94%	17
89							5					7		3		2	1			1				2	.65	33%	15
87			1			3	8				4	1				1	2	1	2	2					.56	47%	17
153					2		17									2	3	5	5	2					.54	89%	19
212						1	16									3	3	5	2	2	1				.50	94%	17
227	1					1	19							2		5	7	3		2				2	.49	83%	23
150					1	1	9					1				2	3	1	2			1			.47	75%	12
110	1			8			8	1	1					1			3	4	1						.44	40%	20
51				1		1	4					6				1		2	1						.44	33%	12
15							11					3				3	5	2		1					.30	78%	14
50					1		9					2		6		6	1	1		1					.19	50%	18
159	3						16					2				11	2	2		1					.16	76%	21
93							13					1				10	1		1	1					.15	93%	14

Table 8

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Planning Sex Implementation

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
197						2		10		8												1	5	4	1.82	50%	20
29								12				2		2									4	8	1.83	75	16
58					1	1	3	10	1				2	1							1	1	5	3	1.75	48	21
52								15					1								2	2	5	6	1.74	94	16
178	8							10					1								1	3	3	3	1.68	53	19
190	2							11				7	1								1	5	3	2	1.64	52	21
81							2	13					1					1			1	2	7	2	1.62	81	16
161	6			1		1		8												1	1	1	4	1	1.59	50	16
189			1		1	5	1	8													1	4	3		1.56	50	16
259								14	1	1						1		1		9	1	2			.98	88	16
24								13									1	2	4	5	1				.81	100	13
180				1				20		1			1				3	4	6	7					.71	87	23
213							1	12		4						3	2	3	1	3					.48	71	17
116						3	1	10	3			1	2			2	7	1							.225	50	20
119							1	8					2			5	2	1							.125	73	11

Table 9

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Communication Skill

Item No.	Distribution of Reallocations SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	Levels Assigned .00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
86			3	4		3	1		5	4												1		4	1.90	25%	20
97						1			16	1										1		2	3	10	1.83	89%	18
74									11													2	4	5	1.82	100%	11
67									14			1								1		3	2	8	1.79	93%	15
42						1			14											2	1	4	3	4	1.61	93%	15
120									20								1		5	12	1	1			0.94	100%	20
262						1			21									2	4	13	2				0.93	95%	22
31									14							2	2	3	5	1	1				0.61	100%	14
78				2	5				8						1	3	2	1	1					1	0.47	50%	16
238									16							2	6	6	2						0.38	100%	16
196						1			19							5	8	3	1	2					0.33	95%	20
55						1			10						1	3	5	2							0.22	83%	12
108						2			18						1	9	5	2	2						0.21	86%	21
186							3		17		3	2				11	4	2							0.12	68%	25
100									20							15	2	3							0.11	100%	20
263									19							13	6								0.08	100%	19
167	1						1		6		7	1		2		1	4		1						0.03	33%	18

Table 10

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Managerial Skill

Item No.	Distribution of Reallocations: SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	Levels Assigned: .00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
230										11					7						1	2	2	6	1.80	61%	18
65		1							1	7	1	1	1									1	4	2	1.79	58%	12
197						2		10		8									1				2	5	1.78	40%	20
248								1		8	1	2	2									3	3	2	1.71	57%	14
66										16					2					1	1	4	5	5	1.68	89%	18
40					1					18					1						1	9	3	5	1.67	90%	20
18					6			2		6				2	2							3	3		1.62	33%	18
32				2	1	3		1		8		1								1	1	4	1	1	1.50	50%	16
128	1							1		17						2	4	4	3	3	1				.55	89%	19
166		1								6			2		7		4	2							.39	44%	16
232										12						3	3	3	1	2					.12	100%	12

Table 11

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Enthusiasm

Item No.	Distributions of Reallocations															Levels Assigned									Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00			
214											22										1	1	3	17	1.91	100%	22
216	4							1			5		3										2	3	1.90	38%	13
245									1		14											2	5	7	1.83	93%	15
156								1		3	13		1								1	4	2	6	1.75	72%	18
5			1		1	2			5		6			1							1	2		3	1.71	38%	16
130	2										17	1										9	2	6	1.70	85%	20
206											15	2									3	4	2	6	1.68	88%	17
85											10				1					2		3	3	2	1.58	91%	11
242				1	2				4		7				1				1	3	1	2			1.14	47%	15
84	2	1				1					9	1	1						1	8					.97	60%	15
64									1		11	10				3	3	3	1	1					.35	50%	22
72	1								2		11		1			4	3	4							.25	73%	15
70		1					2			2	6		1	3	1	4	2								.08	38%	16
167	1						1		6		7	1		2		6		1							.07	39%	16
3		1									13					11	2								.04	93%	14

Table 12

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Initiative

Item No.	Distributions of Reallocations															Levels Assigned									Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00			
76					1	1	4					8		1								1	1	6	1.91	44%	18
194										1		17										1	7	9	1.87	85%	20
160	3	3			1		1	1				11	1		1						1	1	3	6	1.82	50%	22
247					1						1										1	5	6	9	1.77	91%	23
80						1	2	1				13										3	6	4	1.77	76%	17
185	3							2			6	10									1	2	5	2	1.70	48%	21
149	2		1			2						14								2	1	2	6	3	1.62	74%	19
158	4					1						12		1						2	1	3	2	4	1.60	67%	18
191	3										1	17								1	3	6	3	4	1.59	81%	21
125							2			5	1	8										1	3	3	1.59	50%	16
190	2							11				7	1								1	4	2		1.55	33%	21
215						1	3				4	12			1	1	1	2	3	5					.71	57%	21
109	7										1	8	2												.50	39%	18
222	2										1	23				4	8	6	2	1		1		1	.48	88%	26
79							2					17	1			8	4	3					1		.30	85%	20
64									1		11	10				4	3	1	1						.30	45%	22
59										1		11			9	4	3	4							.25	52%	21
193					1		1					7			8	1	5	1							.25	41%	17
51				1		1	4					6				2	2	2							.25	50%	12
221	5						4					5				2	2	1							.20	36%	14
13						1						13				6	5	2							.17	93%	14
89							5					7		3		6	1								.04	47%	15

Table 13

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Persistence and Drive

	Distributions of Reallocations														Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
7								3				3	11	2							1		2	8	1.84	58%	19
126							4						15	1									10	5	1.83	75%	20
134						1		5			1	2	10									4	1	5	1.77	53%	19
236								3				1	19								2	2	11	4	1.72	83%	23
184	9							1				2	8	1								3	4	1	1.68	38%	21
46													15								2	5	4	4	1.67	100%	15
99								1					24						1	2	4	7	4	6	1.55	96%	25
39	1	3					2	1				2	8						1	5	1	1			1.06	47%	17
121	1					3		1					10			1	4	2	1	2					.47	67%	15
129					1								11		6	3	2	4	2						.36	61%	18
202												1	20			8	4	5	2	1					.30	95%	21

Table 14

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Flexibility

	Distribution of Reallocations															Levels Assigned											
Item No.	SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	.00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
9	5							1			1			16								2	7	7	1.83	70%	23
241			2		1	6	1					1		13								3	3	7	1.83	54%	24
138					3			1		4				8	7							2	3	3	1.79	35%	23
38	1				2	4					2	1		8								2	4	2	1.75	44%	18
174						6			1			1		14							1	3	6	4	1.73	64%	22
258			1	1		5	1		1					11				5	2	4					0.73	55%	20
11			1	1	1									14			3	6	1	3	1				0.62	82%	17
148	5				1						1	3	3	7		1	3	2		1					0.39	35%	20
233						2								17		8	3	3	2	1					0.28	89%	19
244					1		4			2				8		4	2	1	1						0.22	53%	15
223				1		3	1					1		15		9	1	4	1						0.20	71%	21
19						2								12		9	2	1							0.08	86%	14

-D14-

Table 15

Distribution of Reallocations and Levels Assigned Modal Quality

Quality: Consideration

Item No.	Distribution of Reallocations SD	M	PB	TK	CA	PA	RD	PL	CS	MS	E	I	P	F	C	Levels Assigned .00	.25	.50	.75	1.00	1.25	1.50	1.75	2.00	Mean Scale Value	% Assigned Modal Qual.	Total No. Judgments
204															19						2	3	1	13	1.83	100%	19
114					1						2				13							3	5	5	1.79	81%	16
230										11					7							2	2	3	1.79	39%	18
115					1				1						15							3	7	5	1.78	88%	17
164					1										24		1				2	3	5	13	1.75	96%	25
61					1					1					12						1	3	3	5	1.75	86%	14
195											2				18					1	1	7	4	5	1.65	90%	20
26							1					1			15		1					3	7	4	1.63	83%	18
181					1										10						3	3	1	3	1.60	91%	11
177											6				13					1	3	3	2	4	1.60	68%	19
183					5		1								17					2	3	9	3		1.44	74%	23
173					1						5	1			10			1	1	1	4	1		2	1.28	59%	17
129					1								11		6	3	1		1	1					.58	33%	18
192					1		3	4			1		2	3	8	2	1	3	1	1					.44	36%	22
166						1				6			2		7		4	2	1						.39	44%	16
250					2										23	7	5	10		1					.38	92%	25
151					3					1				2	15	2	7	4	2						.35	71%	21
154							1	5				1	1		13	2	7	3		1					.33	62%	21
4					10										7	1	3	3							.32	41%	17
193					1		1					7			8	4	2	1			1				.28	47%	17
137					3										18	12	5							1	.18	86%	21
59										1		11			9	4	4	1							.17	48%	21
187															18	13	5								.07	100%	18
102					4										15	14	1								.02	79%	19

Personal Background Data Form

In order to understand various aspects of success in graduate work, several graduate schools of business administration are collaborating with Educational Testing Service in a joint research effort.

Your administration and faculty are cooperating in this work, and we need your help. We need information on your personal background, on your feelings, and on your attitudes. We have developed a questionnaire in which we ask you to give us this variety of information about yourself, usually by marking the one alternative out of several which best or most nearly describes you.

Because this is a research study, the information will be treated confidentially and will not be a part of your academic record. Specific answers given by specific students will not be made known to the administration or faculty. Only group trends, group relations, and grouped frequencies of response will be provided in summarizing the results of this research. The data you give us today on the attached forms will stay in the possession of Educational Testing Service from today on.

Because some of the information we are requesting is personal, you are free to omit any particular question(s). We hope that most or even all of you will answer all the questions, but each of you does have the option to refuse to answer any particular question.

We are asking you to put your name on the questionnaire, however, because in our research we want to explore the relation or lack of relation which the questionnaire items have with your academic grades, as well as with ratings and other descriptions of your whole performance as a student in this graduate school.

There is no time limit, but you probably will not need more than an hour to record the information requested. If any question is ambiguous or not quite applicable to you please add explanatory comments in the margin.

Thank you.

Educational Testing Service
September, 1965

I. Personal Data

(1) Your name:____________________ (last) (first) (middle initial) Today's date:________ 19___

(2) Your permanent address:____________________

(3) Name of graduate school of business you are now attending:____________________

(4) Your date of birth:____________ (Month, day, year) (5) Citizen of USA? ☐ Yes ☐ No (6) Sex: ☐ Male ☐ Female

(7) Is English your native language? ☐ Yes ☐ No (8) If no, please specify your native language:____________

(9) Marital Status: ☐ Single ☐ Engaged ☐ Married ☐ Separated ☐ Divorced ☐ Widowed (10) If married, no. of years married____________

Military Service: (11) Entered____________ (Year, month) (12) Separated____________ (Year, month)

(13) Branch of service:____________ (14) Rank when separated:____________

(15) Military awards and honors:____________________

Major Hobbies or Avocations in last 5 years

(16) Name or description	(17) For which years?	(18) Amount of time spent/month	(19) Amount of money spent/month

(20) List any professional organizations to which you belong:

____

____

(21) List any community groups or activities in which you have participated in the last 5 to 8 years (please star those in which you have been particularly active):

____

____

Personal Data (cont.)

(22) Are you interested in teaching or research as a career?
☐ Yes
☐ Uncertain
☐ No

(23) About how many books do you own, counting paper backs?

Circle one: Under 50 50-74 75-99 100-199 200-499 500 +

(24) About what percentage are fiction?______________

(25) Of the non-fiction, do they represent any areas of interest you can specify?

____

(26) Which of the following best describes the community which you think of as your home town during your high school days?

☐ Suburb in a metropolitan area of more than 2,000,000 population
☐ Suburb in a metropolitan area of 500,000 to 2,000,000
☐ Suburb in a metropolitan area of 100,000 to 500,000
☐ In a city (not a suburb) of more than 500,000
☐ In a city of 50,000 to 500,000
☐ City or town of 10,000 to 50,000
☐ Town of less than 10,000
☐ Farm, ranch or other open country

(27) How long ago did you decide you wanted to go to a graduate school of business?

☐ In high school
☐ In Freshman year of college
☐ In Sophomore year of college
☐ In Junior year of college
☐ In Senior year of college
☐ After graduation from college

II. Physical Condition (28) Height:___________ (29) Weight:___________

(30) Estimated total time lost from work or school in last two years due to illness:______days

(31) Types of illness which lasted 4 days or more during that time:

____

____

(32) How would you describe your general health condition?

Excellent_____ Good_____ Average_____ Fair_____ Poor_____

III. General Background

For each of the following members of your family please give their present age and educational level.

Age need only be approximate. For present educational level please use the following code:

(1) Some high school or less
(2) High school graduate
(3) Some college after high school
(4) College graduate
(5) Advanced study beyond college
(6) Advanced degree beyond college

	Family Member	Approximate Age	Present Educational Level (Use code 1 to 6 as above)	If deceased, give year
(33)	Father			
(34)	Mother			
(35)	Brother			
(36)	Brother			
(37)	Brother			
(38)	Brother			
(39)	Sister			
(40)	Sister			
(41)	Sister			
(42)	Sister			
(43)				
(44)				
(45)				
(46)	Spouse			
(47)	Your child			
(48)	Your child			
(49)	Your child			
(50)	Your child			
(51)	Your child			
(52)	Your child			
(53)	Other dependent			

General Background (cont.)

(54) Which of the following categories comes closest to describing your father's occupation?

If your father is retired, deceased, or unemployed, indicate his former or customary occupation. (Circle only one number from 1 through 9 below.)

1. Unskilled worker, laborer, farm worker
2. Semiskilled worker (e.g., machine operator)
3. Service worker (policeman, fireman, barber, military noncommissioned officer, etc.)
4. Skilled worker or craftsman (carpenter, electrician, plumber, etc.)
5. Salesman, bookkeeper, secretary, office worker, etc.
6. Owner, manager, partner of a small business; lower level governmental official; military commissioned officer
7. Profession requiring a bachelor's degree (engineer, elementary or secondary teacher, etc.)
8. Owner, high-level executive--large business or high-level government agency
9. Profession requiring an advanced college degree (doctor, lawyer, college professor, etc.)

(55) Has your mother worked for wages or salary at any time since you were born?

☐ No (If no, skip to section IV below asking about your educational background.)

☐ Yes (If yes, which alternative in question 54 comes closest to describing the kind of work your mother does, or did? Circle one number immediately below.)

(56) 1 2 3 4 5 6 7 8 9

IV. Your Educational Background

(If any of the following courses of study were under the supervision of any of the Armed Services, please so indicate in space for "name of school.")

(57) High School:______________________ (name of school) (58) Location:__________________

(59) Years: From__________ (60) to__________ (61) ☐ Private? ☐ Public?

(62) Approximate size of H. S. graduating class: ☐ 1-24 ☐ 25-99 ☐ 100-399 ☐ 400 +

Your Educational Background (cont.)

College(s):	Location	Years Attended	Degree (if any) and year
(63)			
(64)			
(65)			
(66)			

(67) Major field of study:

(68) Minor field(s):

Graduate School(s):	Location	Years Attended	Degree (if any) and year
(69)			
(70)			
(71)			

(72) Major field of study:

(73) Minor field(s):

Other schooling:	Location	Years Attended	Course, diploma, year
(74)			
(75)			
(76)			
(77)			

List and briefly characterize any academic honors, distinctions, publications, research, inventions, awards or scholarships (academic or non-academic), etc.:

(78) a. In high school:

(79) b. In college:

(80) Do you believe that your college grades accurately reflect your ability? ☐ Yes ☐ No

(31) If no, suggest briefly on the lines below the circumstances and the nature of the influence:

Your Educational Background (cont.)

Since receiving your bachelor's degree, have you finished other course-work?

(82) ☐ No, I have not
(83) ☐ No, because I have not yet finished a bachelor's degree (expect to on______)
(84) ☐ Yes, for a formal degree in____________________
(85) ☐ Yes, for certification requirements in____________________
(86) ☐ Yes, to prepare myself for a new job (job name?)____________________
(87) ☐ Yes, but for my own interest only (course?)____________________
(88) ☐ Yes, for other reason (name course and reason)____________________

(89) Do you plan to go on for a doctorate degree? ☐ Yes ☐ Uncertain ☐ No

Significant extra-curricular activities in college:

Club Membership(s)

(90) Social/Fraternity____________________
(91) Honorary (describe)____________________
(92) Community (describe or name)____________________
____

Organization offices held in college:

	Title or position	Name of group	Year(s)
(93)			
(94)			
(95)			
(96)			

Sports in college:

	Name	Years: From/To	Position	Intramural? Varsity? mark Squad or Letter	Manager? Captain?
(97)					
(98)					
(99)					
(100)					

Your Educational Background (cont.)

(101) How much conscious career planning have you engaged in?

☐ Very little. I cannot recall thinking about it much

☐ Some thought has been given from time to time

☐ Quite a bit of study and self-analysis

☐ Extensive study and self-analysis

☐ Continuous study and self-analysis

(102) Which of the following best describes how you first felt about your current career choice, i.e., at the time you made it, how did you feel about it?

☐ Decidedly uneasy ☐ Somewhat uneasy ☐ O.K.; some doubts but no serious ones ☐ No qualms whatsoever

☐ No "choice" yet--still deciding

(103) How do you feel now about your current career choice?

☐ Decidedly uneasy ☐ Somewhat uneasy ☐ O.K.; some doubts but no serious ones ☐ No qualms whatsoever

☐ No "choice" yet--still deciding

V. Employment Experience

Summer activities while in college. Include summer employment

Describe nature of job

(104) 1. Pre-Freshman year____________________

(105) 2. Freshman-Sophomore____________________

(106) 3. Sophomore-Junior____________________

(107) 4. Junior-Senior____________________

(108) 5. Post-Senior (Short-term summer job or activities only)____________________

Part-time work while in college

(109) 1. Freshman: Describe job____________________

____________________ (110) No. of Hours/week__________

(111) 2. Sophomore: Describe job____________________

____________________ (112) No. of Hours/week__________

(113) 3. Junior: Describe job____________________

____________________ (114) No. of Hours/week__________

Employment Experience (cont.)

(115) 4. Senior: Describe job ____

________________________________ (116) No. of Hours/week ____________

Full-time employment - List most recent position first. List no more than four. (Use two lines for each.)

Organization	From	To	Title	Duties	Monthly Salary

(117) ____

____

(118) ____

____

(119) ____

____

(120) ____

____

VI. Financial Status

Considering all money borrowed, how much money . . . .
(Circle one number only in each row below.)

	None	Less than $500	$500 to $999	$1,000 to $4,999	$5,000+
(121) a. do you personally owe now for undergraduate training?	0	1	2	3	4
(122) b. have you borrowed for this year's graduate study?	0	1	2	3	4
(123) c. do you expect to borrow for graduate study next year?	0	1	2	3	4
(124) d. do you owe now for major consumer goods (car, appliances, etc.)?	0	1	2	3	4

Financial Status (cont.)

How much do you personally have in the form of savings and securities (or other assets which could be converted into cash in an emergency, except your house) and how much are you currently in debt (excluding mortgages, bills paid within the month, etc.)? (Circle one number only in each column below.)

		Assets	Debts and Liabilities
(125)	Nothing	0	0
(126)	Less than $100	1	1
(127)	$100 - $499	2	2
(128)	$500 - $999	3	3
(129)	$1,000 - $4,999	4	4
(130)	$5,000 or more	5	5

(131) Please indicate how much financial assistance you can expect to receive from parents and relatives during your graduate studies. Include only gifts or loans with voluntary repayment.

☐ None
☐ Very limited (less than $100 each year)
☐ As much as needed, within limits (specify probable maximum $________)
☐ As much as needed

(132) Approximate amount of Life Insurance carried (in thousands):

☐ None
☐ 6 - 10
☐ 21 - 50
☐ 101 +
☐ 1 - 5
☐ 11 - 20
☐ 51 - 100

A MANUAL FOR
A STUDY OF CRITERION RATING SCALES
IN BUSINESS SCHOOLS

Prepared by: Educational Testing Service,
Princeton, New Jersey

For: The ATGSB Research and Development
Committee

February 1965

A Manual for
A study of Criterion Rating Scales
in Business Schools

You have agreed to cooperate in testing a set of rating scales developed to provide a broader basis for evaluating graduate students in business than is provided by grades alone. It has long been suspected that the personal qualities of students may have as much to do with their later success in business as does their academic performance and that such personal qualities ought to be taken into account at the point of admission to graduate study. However, the study of such admissions information has been hampered by the fact that grades do not provide a broad enough criterion against which to test its efficacy in selecting students having the desired personal qualities. The present study is an attempt to provide additional criterion measures which will make possible the development of new admissions measures and the more effective use of those now existing.

Development of the Rating Scales

The development of the rating scales was authorized by the ATGSB Policy Committee and was carried out through the cooperative efforts of a panel of consultants selected from business school faculties, the ATGSB Research and Development Committee, and members of the ETS staff. The qualities to be rated were defined in general terms and illustrative instances intended to define those qualities were collected. The consultants obtained the cooperation of some eighty additional faculty members who independently reallocated the illustrative instances to the various scales as a means of finding the least ambiguous examples. We believe that the resulting scales embody student qualities which are of importance in graduate business education and that, by virtue of carefully devised general definitions and concrete anchoring instances, they constitute an instrument which can be used by business school faculties to provide accurate and reliable ratings.

Nature of the Study

In brief, we are asking you to use the scales in rating several of your students. We would like you to follow the procedures described in this Manual as carefully as possible in order to provide us with the information necessary to assess the suitability of the scales. At this stage we are interested primarily in application of the scales as a research instrument. We want to determine whether the scales themselves are satisfactory for research use, whether they get at relevant and important qualities, and whether the combination of general definitions and illustrations defines the scales with sufficient clarity.[1]

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[1] If the rating scales are used operationally, they will not necessarily be used continuously, or even frequently, or for all students. A school wishing to determine to what degree the qualities represented in the scales characterize its student body would probably use the scales intensively in the course of one study and might not use them again for several years. Furthermore, it might be decided to use only a subset of the total number of scales. Thus, the demands on the faculty would be heavy but of limited duration.

As in any attempt at evaluation through the use of judges, the value of the information produced depends primarily on the conscientiousness with which the judges approach their task and the energy they are willing to put into the judging process. In setting up the procedures described below, we have demanded a good deal of the judges, but we have tried to keep those demands to the minimum which is consistent with the production of sound judgments.

Selection of Students to be Rated

Several students known to be members of your classes have been selected for your rating. The assignment of specific students to each rater is intended to focus the rater's attention on a few students with whom he has a reasonable degree of contact.

Observation of Students in Preparation for Rating

You will be asked to provide ratings on each of 13 qualities for each of the students assigned to you. In preparation for this step, you should familiarize yourself throughly with the meaning of the scales, using both the general definitions at the head of each scale and the illustrative examples defining various points along the scale. You should not accept as a scale definition something which is suggested to you by the title of the scale alone. The words making up these titles will have different meanings for different people. The extended definitions and the illustrative incidents provided are intended to specify exactly what is meant by the scale titles for purposes of this study. It is important that these definitions be accepted without contamination by divergent personal definitions. Once the meanings of the scales have been grasped, a deliberate effort should be made to apply them in observing the behavior of the selected students.

You are asked to become sufficiently familiar with your selected students to render valid judgments about the extent to which they display the qualities to be rated. You should deliberately attempt to observe behavior in the assigned students which is indicative of the qualities defined by the scales. Such behavior will probably be displayed mostly through class interaction and through written assignments. However, some qualities lend themselves more easily to rating through non-academic behavior and we hope that opportunities can be found for observing that type of behavior.

You should begin systematic observation of your students immediately. No method for doing this is prescribed and it is expected that there will be considerable variation. Some observers may wish to make notes, from time to time, about particularly relevant behavior displayed by the students assigned to them. Others may wish to rely on their memories. However the observations are made and recorded, the aim should be to isolate clear-cut, concrete instances which demonstrate the qualities defined by the scales and which can be brought clearly to mind when the ratings are made.

Making the Ratings Based on Reconstructed Incidents

Three or four weeks after you begin observing your students, you should make your ratings. You should try to reconstruct several specific incidents relevant to each quality. If you wish it is permissible to refer to notes and other records which would assist you in reconstructing relevant incidents.

A separate form is provided for recording all incidents and ratings for each student. As an illustration, a judge might reconstruct and record the following four incidents as relevant to the quality of Consideration for a particular student.

Scale Value	13. Consideration (C)
	Gave undivided attention to rather uninspired comments of a classmate in seminar.
	Was careful to criticize a suggested action rather than the student suggesting it.
	Came to class unshaven and unbathed to the obvious embarrassment and discomfort of his associates.
Composite ( )	Showed new student where to get supplies and talked to him understandingly about problem of accomodation.

The incidents you record will be helpful to us in making possible future revisions of the scales, in addition to being used now as a basis for ratings.

Each reconstructed incident is to be rated in relation to the reference points provided by the definitions and examples in the booklet of rating scales.

The illustrative examples furnished with the scale are intended to typify the kind of behavior which embodies the quality in question. The behavioral incidents you observe in your students will not necessarily match the illustrative incidents we have supplied. For each of your observed instances you will have to make a judgment as to which of the illustrative instances it most resembles, or which of the illustrative incidents you would most expect the candidate to display on the basis of what you observed.

The first incident recorded in the sample suggests much more than a conventional degree of consideration and might be judged to fall within the region of the top two examples on the rating scale. This student who gives undivided attention to uninspired comments of a classmate does so out of consideration. He could reasonably be expected to show consideration as well to the extent of helping slower students or offering a ride to another student without transportation. This observed incident could be assigned a scale value of about 1.8, placing it between the top two illustrations. This scale value is recorded in the column to the left of the descriptive sentence.

Similarly, the second incident is rated. Perhaps it is judged as showing about the same degree of consideration or just slightly less. It might be assigned a scale value of about 1.7 which is recorded in the column to the left.

The third incident indicates a great lack of consideration and might be rated at the very bottom of the scale, possibly with a scale value of 0.0.

The fourth incident might be judged to fall between the second and third illustrations from the top of the scale and might be assigned a scale value of about 1.6.

The recorded ratings should appear as below.

Scale Value	
1.8	Gave undivided attention ....
1.7	Was careful to criticize ....
0.0	Came to class unshaven ....
1.6	Showed new student ....
Composite ( )	

Notice that at this stage you are rating discrete examples of observed student behavior and an overall evaluation of the student's Consideration is not made yet.

If you have not been able to reconstruct specific instances of the student's behavior but have a general impression about where he falls on the scale for a given quality, record the appropriate scale value in the space provided and indicate by the letters IM (impression) that the rating was based only on a general impression. Since these ratings are much less useful than those based on recordable observations they should be kept to a minimum. It may be that a few of these will be necessary on the first attempt to make ratings. We hope that, if they occur, you will make a special point of making supplementary observations for that student.

Obtaining a Summary Rating of Several Reconstructed Incidents

Enough incidents should be reconstructed and rated to provide what in your judgment is a representative sample of behavior characteristic of the student. Once this is done, you should arrive at a summary judgment of the student with respect to the given quality. It is not advisable for this purpose simply to average the earlier ratings. It may be that you will want to weight the rating of one incident more heavily than the others. A particular rating might be better than earlier ones because you knew the student better and the observed incident was more characteristic than earlier ones. Your summary ratings on each quality will, therefore, require the exercise of judgment and will represent the best rating of the student you can make in the light of all the evidence you have been able to gather.

In the sample, the third incident involving an unkempt appearance might be very atypical and should be completely discounted in arriving at a summary rating. Perhaps the students' house burned down the previous night, in which case a composite value of about 1.7 would be most appropriate. On the other hand, there might be no good reason to justify such an incident and it might be treated as an instance of a gross lack of consideration and given extra weight to produce a composite rating as low as 0.5. In the absence of any information on the characteristicness of various incidents, equal weight might be assigned to each to arrive at a composite of about 1.3.

The summary or composite value for each quality is recorded in the appropriate parenthesis in the left column.

Recapitulation

To summarize the steps for use of the scales:

1. Become familiar with the scales, the general definitions of each quality, and the content of relevant behaviors used to illustrate the qualities.
2. Observe the students assigned to you over a period of several weeks, paying particular attention to incidents relevant to the qualities you are to rate.
3. At the end of the observation period, begin your rating of a particular student by reading the reference information on a given scale and reconstruct a specific incident relevant to the quality. If possible, make a brief descriptive note of the incident on the rating form.
4. Rate the specific incident, using the examples we have provided as reference points.
5. Reconstruct and rate additional incidents as necessary.
6. Combine all available information to form a summary evaluation on the particular quality, making appropriate allowances for the relevance and importance of specific incidents rated on the quality.
7. Repeat the above steps for each of the scales, producing 13 summary ratings (one for each of the qualities) for each student assigned to you.

BUSINESS SCHOOL RATING SCALE RECORD FORM

Use a separate copy of this form to record relevant information used in rating each student assigned to you. Complete the identification data and any appropriate criterion data. Brief descriptions of observed behavior should be recorded in the section corresponding to the relevant quality. Rate each observed incident using the separate booklet of general definitions and anchoring illustrations as a reference. Record your rating for each statement in the column at the left. At the end of the study make a summary of all ratings in a given section and record this summary in the appropriate parentheses on the left.

Student Rated ______________________________ Judge's Name ______________________
(first) (middle initial) (last)

School ____________________ Date Observations Began ________ Date of Summary Ratings ____________

Criterion Data (if available) Most recent cumulative Graduate Avg ________ (How many semesters? ________)

Undergraduage Avg __________ 1st Semester Graduate Avg ________ 1st yr. Graduate Ave ________

ATGSB Total ______________ Verbal ____________________ Quantitative ____________

Other:

Scale Value	1. Self-Development (SD)
Composite ( )	

Scale Value Composite ( )	2. Perspective and Breadth of Knowledge (PB)
Scale Value Composite ( )	3. Technical Knowledge (TK)
Scale Value Composite ( )	4. Critical Awareness (CA)
Scale Value Composite ( )	5. Problem Analysis Ability (PA)

Scale Value

6. Resolution and Decisiveness (RD)

Composite
(   )

Scale Value

7. Planning for Implementation (PI)

Composite
(   )

Scale Value

8. Communication Skill (CS)

Composite
(   )

Scale Value

9. Enthusiasm (E)

Composite
(   )

Scale Value Composite ( )	10. Initiative (I)
Scale Value Composite ( )	11. Persistence and Drive (PD)
Scale Value Composite ( )	12. Flexibility (F)
Scale Value Composite ( )	13. Consideration (C)